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SAN FRANCISCO DEPARTMENT OF CITY PLANNING 100 LARKIN STREET · SAN FRANCISCO, CALIFORNIA 94102

FINAL
ENVIRONMENTAL IMPACT REPORT

Spear and Main Street Office Building

EE 80.349

MAY 1982

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Publication Date: 6 November 1981
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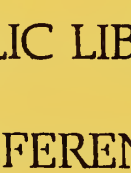

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● Changes in the text of the Draft EIR are indicated by solid dots at the beginning of each revised section, paragraph or table.

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Spear and Main Street
office building : final
1982.

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CONTENTS

		Page
I.	List of Figures	iii
	List of Tables	iv
	SUMMARY	v
I.	PROJECT DESCRIPTION	1
	A. Location and Objectives of Project Sponsor	1
	B. Project Description and Scheduling	4
	C. Zoning	5
	D. Required Approvals	17
II.	SETTING	18
	A. Land Use	18
	B. Transportation	20
	C. Climate and Air Quality	34
	D. Noise	37
	E. Visual Quality and Urban Design	40
	F. Soils and Seismicity	45
	G. Historical Resources	46
	H. Community Services	49
	I. Energy	51
	J. Economic and Fiscal	51
III.	IMPACTS	53
	A. Land Use	53
	B. Transportation	55
	C. Climate and Air Quality	69
	D. Noise	73
	E. Visual Quality and Urban Design	77
	F. Soils and Seismicity	81
	G. Historical Resources	88
	H. Community Services	89
	I. Energy	91
	J. Economics	96
	K. Growth Inducement	102

CONTENTS (cont'd)

		Page
IV.	MITIGATION	105
	A. Transportation	105
	B. Air Quality	107
	C. Noise	108
	D. Visual Quality and Urban Design	109
	E. Soils and Seismicity	110
	F. Historical Resources	111
	G. Community Services	111
	H. Energy	112
	I. Housing	113
V.	UNAVOIDABLE ADVERSE IMPACTS	115
VI.	ALTERNATIVES TO THE PROPOSED PROJECT	117
	A. No Project Alternative	117
	B. Alternative Sites Uses	117
	1. Retail Sales and Hotel Use	117
	2. Wholesaling Use	118
	3. Housing/Commercial/Office Use	118
	4. Parking Garage	121
	C. Development Without Interim Bonus Controls	122
	D. Alternative Designs	123
	E. Guiding Downtown Development Alternative	127
VII.	SUMMARY OF COMMENTS AND RESPONSES	133
VIII.	EIR AUTHORS AND PERSONS CONSULTED	~~133~~ 268
IX.	DISTRIBUTION LIST	~~136~~ 271
X.	BIBLIOGRAPHY	~~140~~ 276
	RESOLUTION OF CERTIFICATION	279
	APPENDICES	
	A. Intersection Capacity Analysis and Levels of Service Definitions	A-1
	B. Microclimate Impact Study	A-7
	C. Fundamental Concepts of Environmental Noise	A-19
	D. Estimated Replacement Costs of Proposed Project	A-23

FIGURES

		Page
1.	Regional Location Map	2
2.	Site Location Map	3
3.	Plan Showing Perspective Drawing Location	6
4.	Perspective Drawing 1	7
5.	Perspective Drawings 2 and 3	8
6.	Perspective Drawing 4	9
7.	Isometric Drawing	10
8.	Ground Floor Plan	11
9.	Basement Floor Plan	13
10.	Typical Floor plan	14
11.	Zoning Map	15
12.	Land Use Map	21
13.	Existing and Proposed Buildings on Block 3717	22
14.	Street Network	23
15.	Existing Pedestrian Conditions	33
16.	Noise Measurement Locations	38
17.	Project Area Photograph	41
18.	Project Area Photographs	43
19.	Project Area Photographs	44
20.	Pedestrian conditions with Proposed Building	65
21.	Block 3717 Pedestrian System	68
22.	View Toward Project Site from West End of Bay Bridge	82
23a. & 23b.	Groundshaking and Legend	84-85
24.	Estimated Electrical Consumption	94
25.	Estimated Gas Consumption	95
26.	Alternative Design A-West Elevation	124
27.	Alternative Design B-West Building Elevation	125
28.	Alternative Design C-South Elevation	126

TABLES

		Page
1.	Square Footage and FAR Calculations	16
2.	Muni Service Summary	26
3.	Projected 1983 Muni Patronage	28
4.	Number of Days Selected Pollutants Exceeded State or Federal Standards	36
5.	15-Minute Ambient Noise Measurements	40
● 5a.	Income Ranges for Office Workers in Downtown High-Rises, 1981	52a
● 5b.	Housing Prices in San Francisco, 1981	52b
● 5c.	Percent of Office Worker Households Able to Afford Various Monthly Housing Costs, 1981	52c
● 5d.	Single-Family Permits Issued by County for Selected Years	52f
● 5e.	Multi-Family Permits Issued by County for Selected Years	52g
● 6.	Project and Cumulative Trip Generation During PM Peak Hour	58
● 7.	Summary of Existing Muni Patronage, 1983	60
8.	Curbside Carbon Monoxide Concentrations in 1983	71
9.	Regional Automobile Emissions	72
● 10.	Estimated Project Revenues at Full Occupancy	100
● 10a.	Estimated Number of Office Worker Households Able to Afford Various Monthly Housing Costs for Spear and Main Office Building	102a
● 10b.	Major Office Building Construction in San Francisco	103b
● 10c.	Projected Effects of Downtown Office Development on Regional Housing Markets	103c
● 10d.	Estimated Number of Office Worker Households Residing Outside San Francisco Able to Afford Average Priced Housing and Rental Units for Spear and Main Office Building	103d
11.	Spear and Main Street Project Proposals	129

SUMMARY

PROJECT DESCRIPTION

The proposed Spear and Main Street Office Building would be located between Spear Street and Main Street, approximately in the center of the block bounded by Mission, Main, Howard and Spear Streets, San Francisco, California.[1]

The project sponsor, Vintage Properties-Spear Street, with offices in Menlo Park, California, holds a long-term lease on the project site. Vintage Properties-Spear Street desires to construct an office building on the property to lease space to tenants providing professional services that would occupy 1 to 2 floors each. Tenant firms would be national and local companies in the fields of law, accounting, engineering and design and sales. Retail shops are proposed for ground floor of the project. The project sponsor would seek a reasonable return on investment capital.

The proposed project would consist of a structure containing 19 floors rising 240 feet above the surrounding grade. The project would contain a gross interior floor area of 306,500 square feet with net rentable space of 279,060 square feet excluding 18,700 square feet of short-term parking space for 36 cars. Of the total net rentable space, retail space would contain 7,460 net rentable square feet. Office space would consist of 271,600 net rentable square feet.

The project would be constructed using steel framing and precast concrete panels covered with brick tiles. The glass would be dark grey or dark bronze held in place by aluminum window frames of the same color. The corners of the building would be truncated, set at a 45° angle to the building sides.

---

[1]Assessor's Block 3717, Lots 5, 10 and 11.

Construction of the shell would be expected to cost about $18,000,000 (1980 dollars) with tenant improvements costing about $5,500,000. Construction would be expected to occur over about a 2-year period beginning in late 1982 and completed in late 1984.

The proposed project site is located in the southeastern part of the C-3-O (Downtown Office) district. Professional and business offices are permitted uses in this district as are related facilities such as retail and services uses and places of assembly and entertainment. The basic floor area ratio (FAR) allowable in the C-3-O district is 14:1. The proposed project would have a total gross floor area of 306,500 square feet and thus a FAR of 12.2:1.

The proposed project would be subject to Discretionary Review by the City Planning Commission.

IMPACTS AND MITIGATION MEASURES

A. LAND USE

Impacts: The proposed project would be part of a trend of increasing intensification of office development in the South-of-Market area. Cumulatively, this may create secondary impacts in the form of further development of support retail shopping and service-related establishments to serve the increased employee population. It may also contribute to create "spillover" effects such as increased land demand in the South-of-Market area, employment displacement and increased housing demand.

B. TRANSPORTATION

Impact: The proposed project would generate a total of 5,000 daily person trips of which approximately 2,700 would be work trips and 2,300

would be non-work trips. Approximately 1,000 of the daily trips would occur during the evening peak hour.

In establishing base traffic conditions without the project, it must be recognized that traffic increases will result from the already approved downtown development. If auto commuting increases at the same rate as transit travel, the total peak hour auto travel in the downtown area could increase by approximately 30% in 1983 (the proposed project would represent approximately 4% of this increase).

Mitigation: Upon completion of the project, the project sponsor would request tenant firms to implement a flexible time system for employee working hours and a preferential parking program for carpools and vanpools to reduce peaks of congestion in the transportation system.

● Impact: The committed downtown development would increase MUNI ridership by about 9,470 trips (about a 30% increase) during the P.M. peak hour (the proposed project would add about 288 P.M. peak hour trips). Although some added capacity would occur in bus service (Muni staff indicates some articulated coaches will be obtained), and the MUNI Metro light-rail service, the overall capacity increases by 1983 would be about 10-15% during the P.M. peak hour.

Mitigation: The project sponsor would contribute to a fund for maintaining and augmenting transpor-

tation service, in an amount proportionate to the demand created by the project through an equitable funding mechanism such as an assessment district, which would meet the peak demand generated by cumulative office development in the downtown area.

Impact: The project would generate demand for approximately 340 long-term parking spaces and 145 short-term parking spaces. The majority of the demand would need to be accommodated at other locations in the area where current parking occupancy rates are about 85%-95%.

Mitigation: The project sponsor would participate in any future areawide study of current parking conditions and future needs. If new short-term (or long-term) parking is determined appropriate in the downtown area, the project sponsor would participate in the equitable funding of such facilities through a special assessment district according to criteria determined by the study.

C. AIR QUALITY

Impact: During construction, earthmoving and grading would generate dust and suspended particulates.

Mitigation: Watering to control dust on-site during construction would be done twice daily by the project sponsor.

Impact: From a cumulative standpoint, a 1980 ABAG study of regional air quality found that photo-

chemical oxidants would be a persistent problem in the future, and that reductions in hydrocarbons and oxides of nitrogen emissions would be necessary to attain the federal standard for photochemical oxidant (ozone) in the Bay Area.

Mitigation: Mitigating transportation impacts would also mitigate air quality impacts. These measures would include car-pooling, van-pooling, and staggered work hours.

D. NOISE

Impact: During foundation construction, the major noise source would be pile driving, which would last about 3 weeks. During pile driving, noise levels of approximately 105 dBA at 50 feet could be expected. After the pile driving phase, the impact torque wrenches, the loudest of non-piledriving equipment, would emit noise levels of 95 dBA at 50 feet, as measured in downtown San Francisco.

During pile driving, office workers in adjacent buildings would not be able to carry on a conversation, would not be able to use the telephone, and would be distracted from their work and would probably complain to the management. Vibration levels would be great enough to shake the buildings.

The use of impact wrenches would be intermittent during framing of the building, but workers in offices nearest the noise source

would not be able to use the telephone or carry on a conversation when the impact wrenches would be in use.

- Mitigation: To mitigate pile driving noise impacts the project sponsor has agreed to limit pile driving to between the hours of 1 P.M. and 9 P.M. A wood construction barrier would be installed around the project site and would be effective in reducing noise levels by up to 15 dBA at the lower floors of nearby buildings.

E. VISUAL QUALITY AND URBAN DESIGN

Impact: At increasing heights in adjacent buildings, views from those buildings would be blocked up to the building's 19th floor level; the degree of view blockage would vary with respect to elevation and observer location in relation to the project.

- Mitigation: A lower building would avoid obstructing views from the upper floors of adjacent buildings. To maximize a financial return on rentable space, the project sponsor is not proposing to construct a structure of lower height containing fewer gross square feet.

F. SOILS AND SEISMICITY

Impact: If a severe earthquake, such as the 1906 San Francisco earthquake of estimated Richter magnitude 8.3, were to occur along the San Andreas Fault in the Bay Area, violent ground-

shaking could have such effects as cracking building walls and permanent deformation of structural members.

Mitigation: Geotechnical engineering investigations including test borings would be done to determine soil characteristics and thickness, to recommend specific foundation design and to determine whether dewatering would be necessary and safe relative to adjacent structures. Results and conclusions of these technical studies would be taken into account in design plans for the proposed building.

The structure would be designed to meet the seismic design standards of the Uniform Building Code (UBC) and the Structural Engineers Association of California (SEAOC). Computer analysis of the structural frame would be performed in order to design the seismic restraint of the structural frame.

G. HISTORICAL RESOURCES

Impact: It is not feasible to rule out the possibility of encountering historical resources or a buried hulk (or a portion thereof) during construction of the new structure.

Mitigation: If historical artifacts or a buried hulk are discovered during construction of the proposed project, the contractor would stop work in the area of the find to permit professional evaluation and/or retrieval of the find.

H. ENERGY

Impact: Assuming a potential 50-year lifetime for the building, the estimated lifetime energy cost (including construction, operation, transportation and removal) would be about 4 trillion BTU. This is equivalent to approximately 740,000 barrels of crude oil.

Mitigation: The proposed project would comply with Title 24, Division 20, Article 2 of the California Administrative Code regarding energy conservation standards and energy consumption.

I. ECONOMICS

Impact: In constructing the project, a total of about 360 person years of construction labor would be generated. When completed, the net annual increase over existing composite property tax revenues to San Francisco would be between $218,800 to $277,800. It would be expected that the project revenues to San Francisco would exceed the incremental costs directly attributed to the project at the time of construction, although Proposition 13 limitations on property tax increases could change this prediction during the life of the building.

J. GROWTH INDUCEMENTS

Impact: The project would continue the trend of intensifying office uses in the downtown area, specifically south of Market Street. Together with other new office development near the site, it could stimulate further office growth in the immediate

vicinity, on lots now used for parking or in low-rise structures containing business services (such as printers and office suppliers) and light industrial uses (such as warehousing). Employee purchasing power could stimulate employee-oriented retail activity in the site vicinity. According to a formula provided by the Department of City Planning, the project would create a demand for 259 dwelling units in the City.

Mitigation: The project sponsor would apply good faith efforts to build and/or rehabilitate housing units in the San Francisco Bay Area in order to alleviate the housing demand attributable to the project.

ALTERNATIVES

Alternatives to the proposed project considered include the no-project alternative, alternative uses of the site, development without interim bonus controls, alternative design and development according to a series of regulatory proposals for managing downtown development prepared by the Department of City Planning.

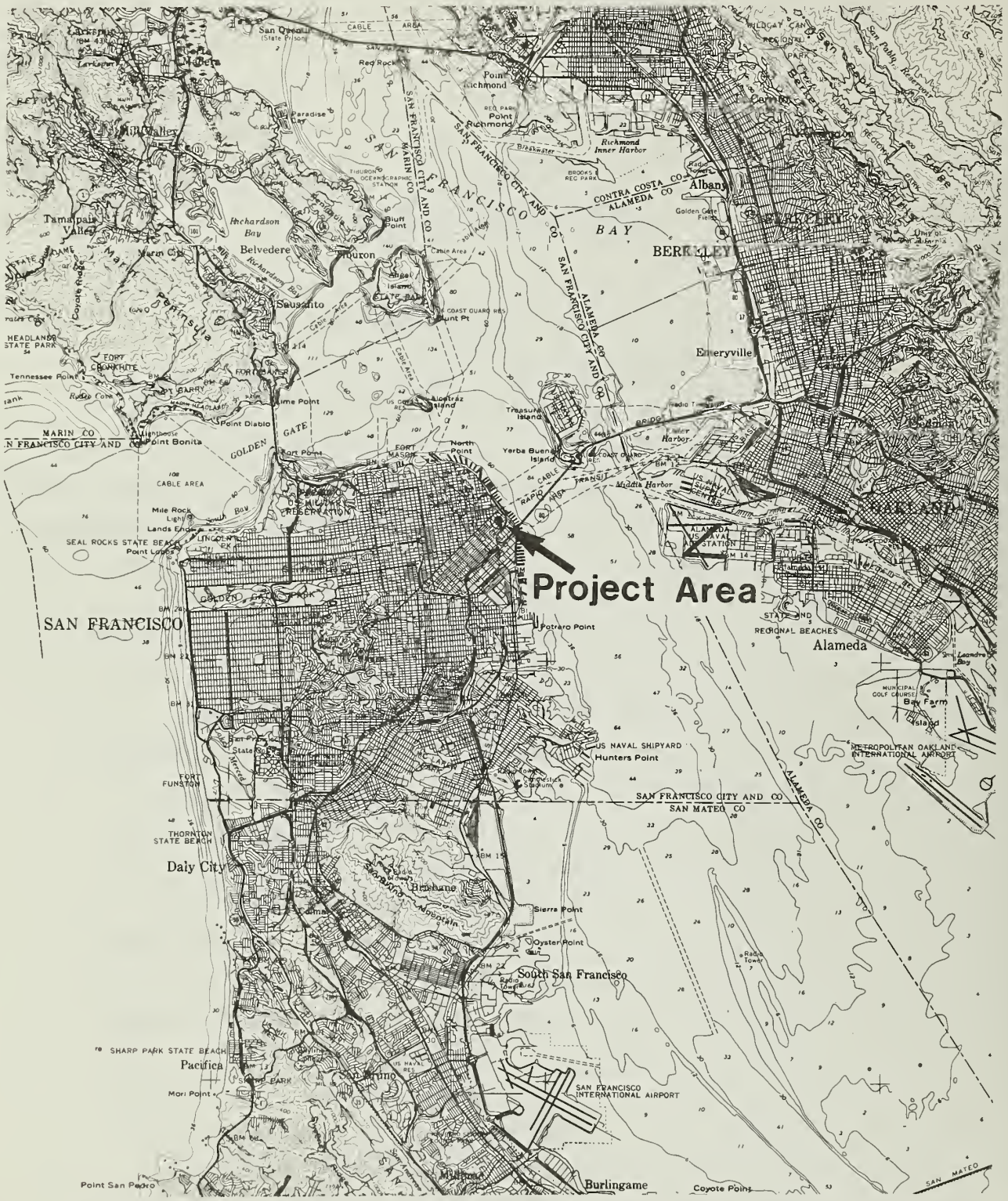
CHAPTER I

PROJECT DESCRIPTION

A. LOCATION AND OBJECTIVES OF PROJECT SPONSOR

The proposed Spear and Main Street Office Building would be located between Spear Street and Main Street on Assessor's Block 3717, Lots 5, 10, and 11, approximately in the center of the block. The block is bounded by Mission, Main, Howard and Spear Streets, in the South-of-Market area of San Francisco. The project site measures 137.5 feet along Main Street, and 45.8 feet along Spear Street, and contains a total site area of 25,208 square feet. The general location of the project site is shown in Figure 1, page 2. The precise location of the project site and its shape is shown in Figure 2, page 3.

The project sponsor, Vintage Properties-Spear Street, with offices in Menlo Park, California, holds a long-term lease on the project site. Vintage Properties-Spear Street desires to construct an office building on the property to lease space to a series of tenants providing professional services that would occupy 1 to 2 floors each. Tenant firms would be national and local companies in the fields of law, accounting, engineering and design, and sales. Retail shops are also proposed for the ground floor of the project. The project sponsor would seek a reasonable return on investment capital (see Chapter II.J., Economics, page 51), and bases projected tenant demand on the project sponsor's observed historical trends on leasing patterns in the area indicating a continued need for office space in San Francisco. Specific major tenants are not known at this time.



Regional Location Map

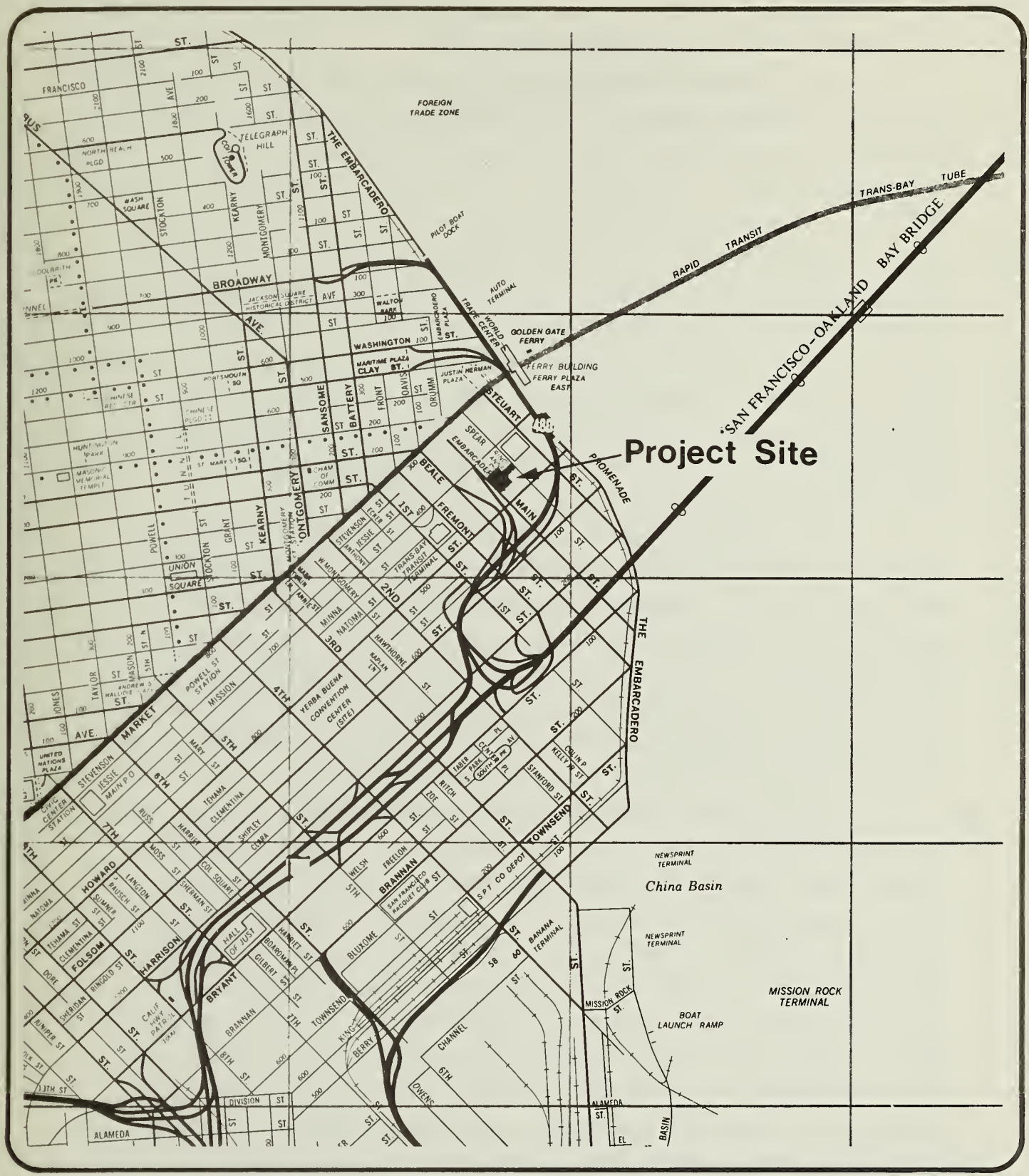
North

0 1 2 4

Scale Miles

Source: USGS

Figure No.1


Project Site
FOREIGN TRADE ZONE
THE EMBARCADERO
TELEGRAPH HILL
PILOT BOAT DOCK
AUTO TERMINAL
TRANS-BAY TUBE
RAPID TRANSIT
SAN FRANCISCO-OAKLAND BAY BRIDGE
BROADWAY
WASHINGTON
GOLDEN GATE FERRY
FERRY BUILDING
FERRY PLAZA EAST
JUSTIN HERMAN PLAZA
MARITIME PLAZA
EMBARCADERO PLAZA
WORLD TRADE CENTER
STEUART
PROMENADE
SPEAR
BEALE
MAIN
FREMONT
1ST
2ND
3RD
4TH
5TH
6TH
7TH
8TH
MARKET
MISSION
HOWARD
FOLSOM
HARRISON
BRYANT
BRANNAN
TOWNSEND
KING
BERRY
CHANNEL
ALAMEDA
DIVISION
SANSOME
BATTERY
MONTGOMERY
KEARNY
STOCKTON
GRANT
POWELL
UNION SQUARE
YERBA BUENA CONVENTION CENTER (SITE)
POWELL ST STATION
CIVIC CENTER STATION
TRANS-BAY TRANSIT TERMINAL
NEWSPRINT TERMINAL
China Basin
SP CO DEPOT
BANANA TERMINAL
MISSION ROCK
MISSION ROCK TERMINAL
BOAT LAUNCH RAMP
HALL OF JUST
SAN FRANCISCO RACQUET CLUB
CALIF HWY PATROL
NORTH BEACH
CHINATOWN
JACKSON SQUARE HISTORICAL DISTRICT
MASONIC MEMORIAL TEMPLE
CHAM OF COMM
COLUMBUS
WASH SQUARE
HUNTINGTON SQUARE
PORTSMOUTH SQ
ST MARY'S SQ
UNITED NATIONS PLAZA
ANDREW J HALDIE MEM
LANGTON PAUSCH ST
SUMMER ST
COL SQUARE
SHERMAN ST
HANNIET ST
BOARDMAN PL
GILBERT ST
DORE
RINGOLD ST
SHERIDAN ST
JUNIPER ST
13TH ST
8TH ST
7TH ST
6TH ST
5TH ST
4TH ST
3RD ST
2ND ST
1ST ST
MINNA
NATOMA
MISSION
MARY
TEHAMA
CLEMENTINA
RUSS
HARRIET
SHIPLEY
CLARA
MOSS ST
WELSH
FREELON
BLUXOME
LUCAS
TAYLOR
JONES
LEAVENWORTH
HYDE
LARKIN
POLK
VAN NESS
FRANKLIN
GOUGH
OCTAVIA
LAGUNA
BUCHANAN
WEBSTER
FILLMORE
STEINER
PIERCE
SCOTT
DIVISADERO
BAKER
LYON
CENTRAL FWY
MARINA BLVD
LOMBARD ST
CHESTNUT ST
FRANCISCO ST
BAY ST
NORTH POINT ST
BEACH ST
JEFFERSON ST
FISHERMAN'S WHARF
PIER 39
PIER 35
PIER 33
PIER 31
PIER 29
PIER 27
PIER 23
PIER 19
PIER 15
PIER 9
PIER 7
PIER 5
PIER 3
PIER 1
EMBARCADERO PIER
EMBARCADERO PLAZA
EMBARCADERO CENTER
EMBARCADERO FWY
EMBARCADERO ROADWAY
EMBARCADERO SOUTH
EMBARCADERO NORTH
EMBARCADERO CENTER
EMBARCADERO PLAZA
EMBARCADERO PI

B. PROJECT DESCRIPTION AND SCHEDULING

The proposed project would consist of a structure containing 19 floors (excluding the mechanical penthouse and elevator core machine room) rising 240 feet above the surrounding grade (Figures 3, 4, 5, 6 and 7, pages 6, 7, 8, 9 and 10). The building would measure 117.5 feet along Main Street and would be 132.5 feet deep (excluding bay windows which would project outward from the building face), extending to the interior portion of the block, (Figure 8, page 11). The north and south facing walls would be set back 10 feet from the north and south property lines. The east facing building wall would be set back 5 feet from the east property line and the west (Main Street) facing building wall would coincide with the west property line (Figure 10, page 14).

The building would have setbacks of 15 feet from the adjacent Howard and Main Street Building to the south, and 22½ feet from the the proposed adjacent 115-135 Main Street Building to the north above the ground floor. The ground floor wall along Main Street would abut the ground floor wall of the 115-135 Main Street Building. The northeast building face would be set back 17 feet from the southwest face of the 150 Spear Street Building, currently under construction.

The project would contain a gross interior floor area of 306,500 square feet with net rentable space of 279,060 square feet, excluding about 18,700 square feet of tenant parking space for 35 cars in the basement (Figures 9 and 10, pages 13 and 14). The average gross square feet per floor would be about 16,130 square feet, while the average net rentable square feet per floor would be about 14,690 square feet. Tenant parking is proposed by the project sponsor as being necessary to meet the minimum needs of the tenants expected to lease office space, and would replace a portion of the 145 parking spaces that previously occupied the site (see Section II.A., Land Use, page 19). Of the total net rentable space, ground floor retail space would contain 7,460 square

feet. Office space would consist of 271,600 net rentable square feet. A truck loading and unloading area, freight storage and electrical equipment would be contained on the ground floor (Figure 8, page 11). Truck access would be off Main Street.

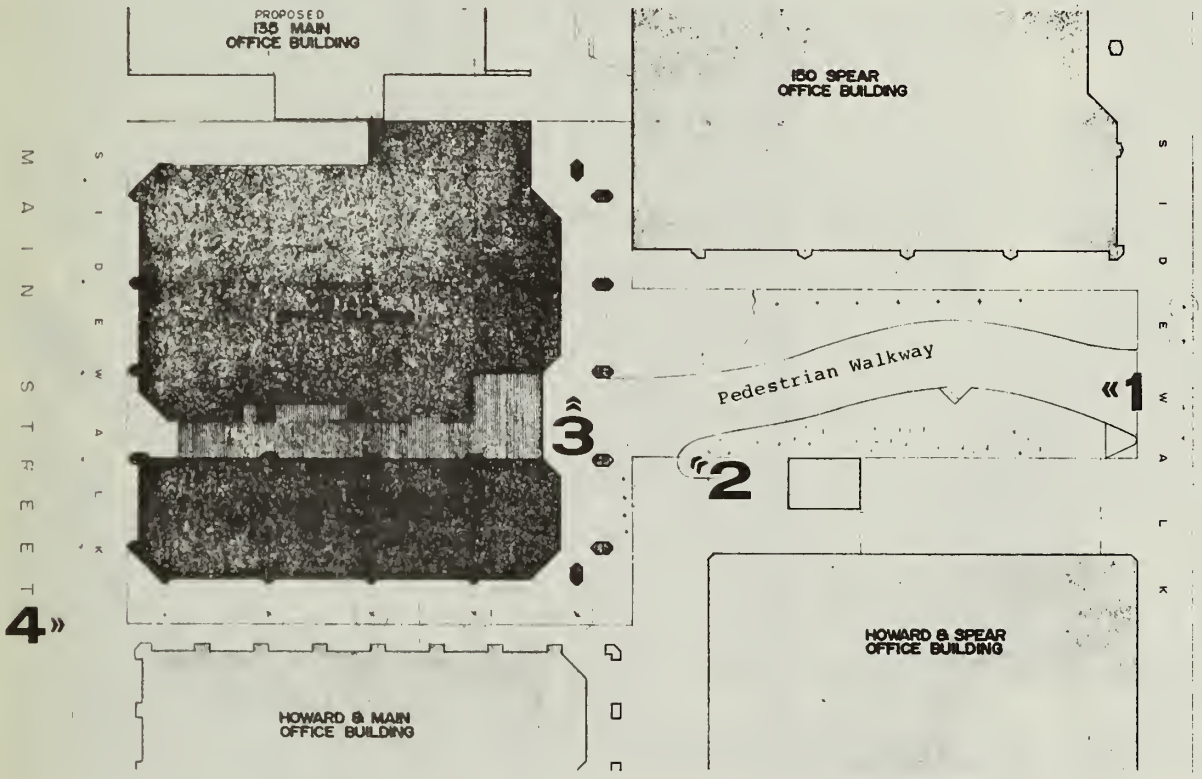
The project's main pedestrian entry would be off the landscaped pedestrian plaza extending west from Spear Street. The ground floor would contain a lobby with a building directory adjacent the elevators near the center of the structure. An open-air walkway would extend south from the main entry to connect to an existing walkway leading to Howard Street between the Howard and Spear Street Building (Borel Building) and Howard and Main Street Building (Figure 8, page 11). An open-air walkway would also lead north to connect to the proposed 115-135 Main Street Building (Section III.E., Impacts, Visual Quality and Urban Design, page 77).

The project would be constructed using steel framing and precast concrete panels covered with brick (Chapter II.E., Visual Quality and Urban Design, page 40). The glass would be dark grey or dark bronze held in place by aluminum window frames of the same color. The corners of the building would be truncated, set at a 45° angle to the building sides.

Construction of the shell would be expected to cost about $18,000,000 (1980 dollars) with tenant improvements costing about $5,500,000. Generally, an "open landscape" scheme using moveable partitions and walls capable of being relocated to accommodate varying office space functional needs are envisioned for the leasable office space. Construction would be expected to occur over about a 2-year period beginning in mid-1982 and completed in mid-1984. First tenants would be expected to occupy portions of the structure in April or May of 1984 with remaining tenants continuing to move in for the remainder of 1984 and into 1985. Architects for the proposed project are Jorge De Quesada, Inc., with offices in San Francisco.

C. ZONING

The proposed project site is located in the southeastern part of the C-3-0 (Downtown Office) district (Figure 11, page 15). Professional and business offices, retail services, places



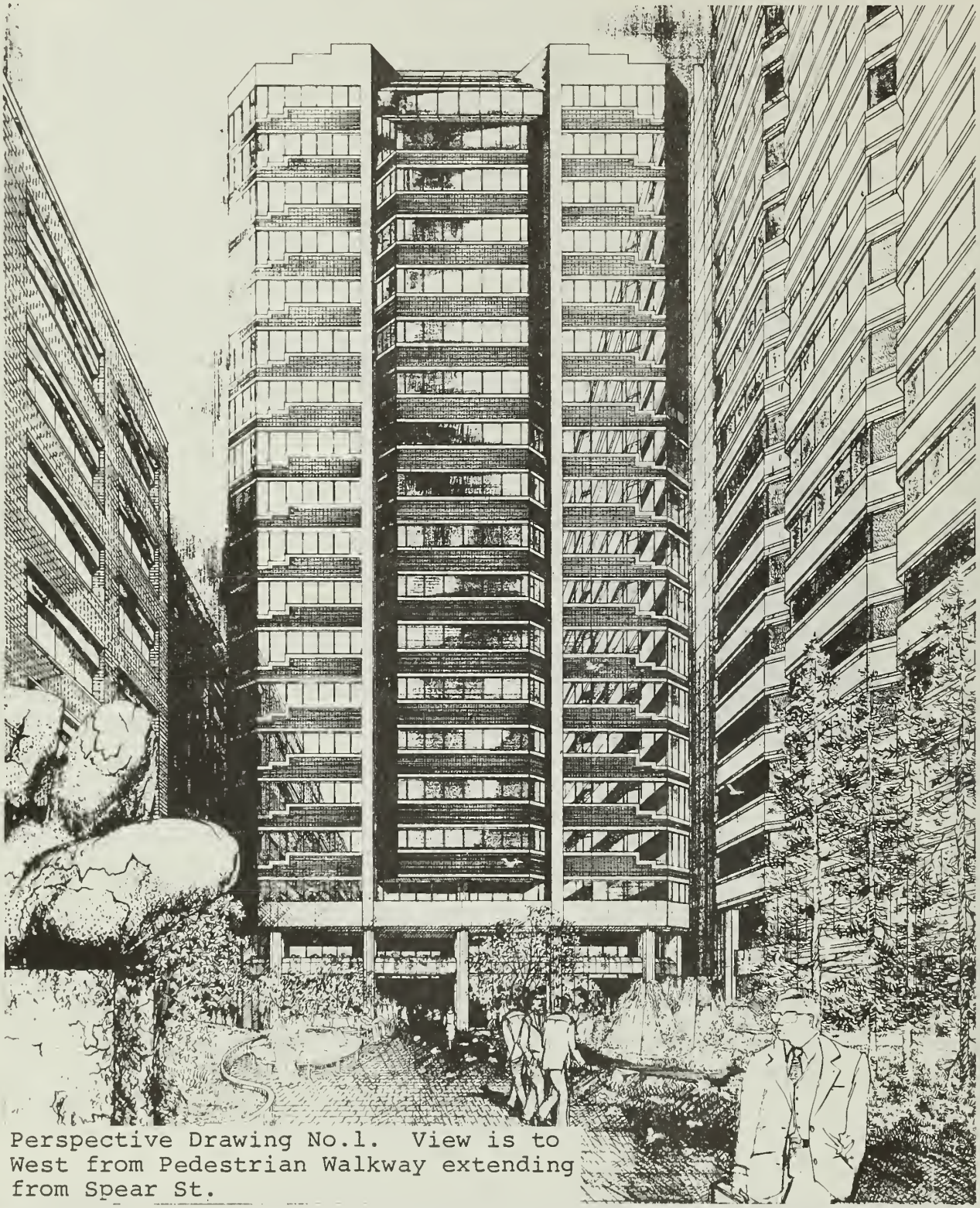
Plan showing perspective drawing locations

North

0 10 20 40

Scale Feet

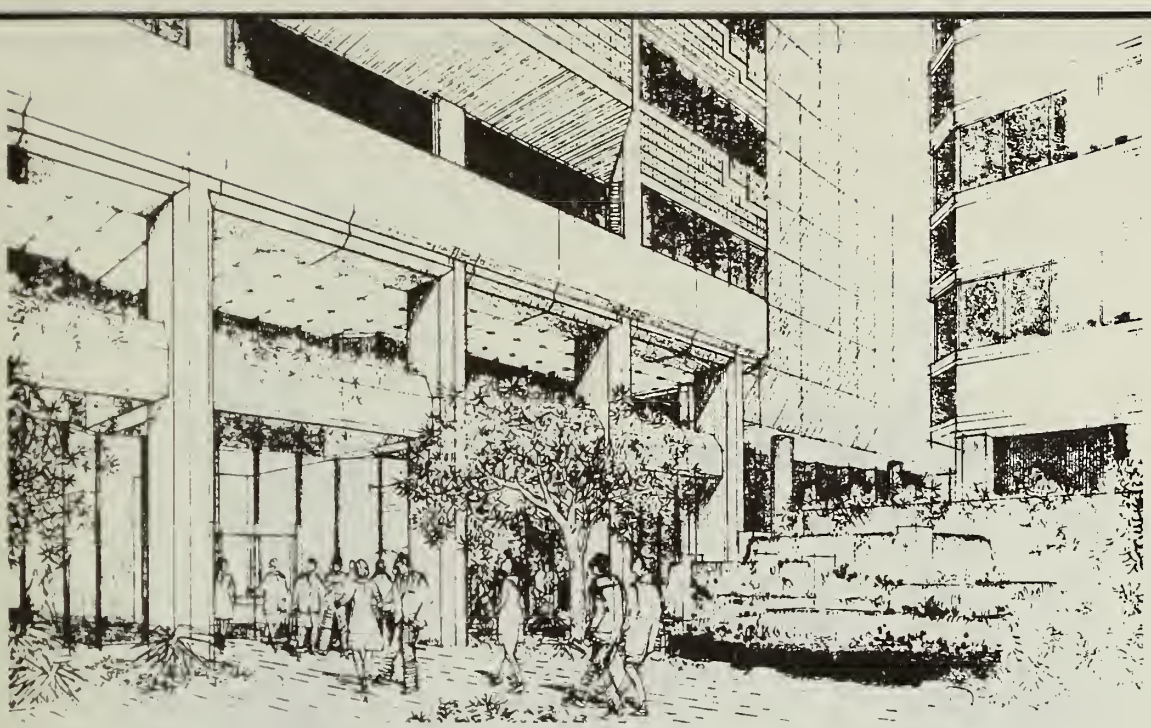
Figure No. 3



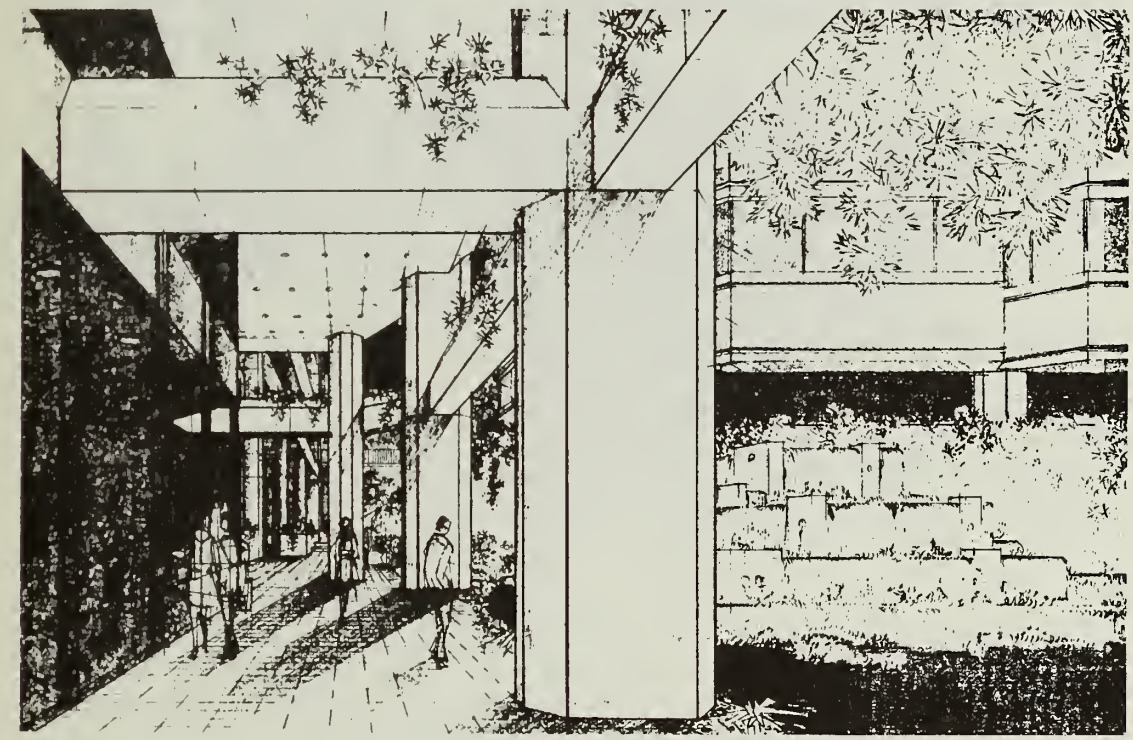
Perspective Drawing No.1. View is to West from Pedestrian Walkway extending from Spear St.

Perspective Drawing

Figure No. 4



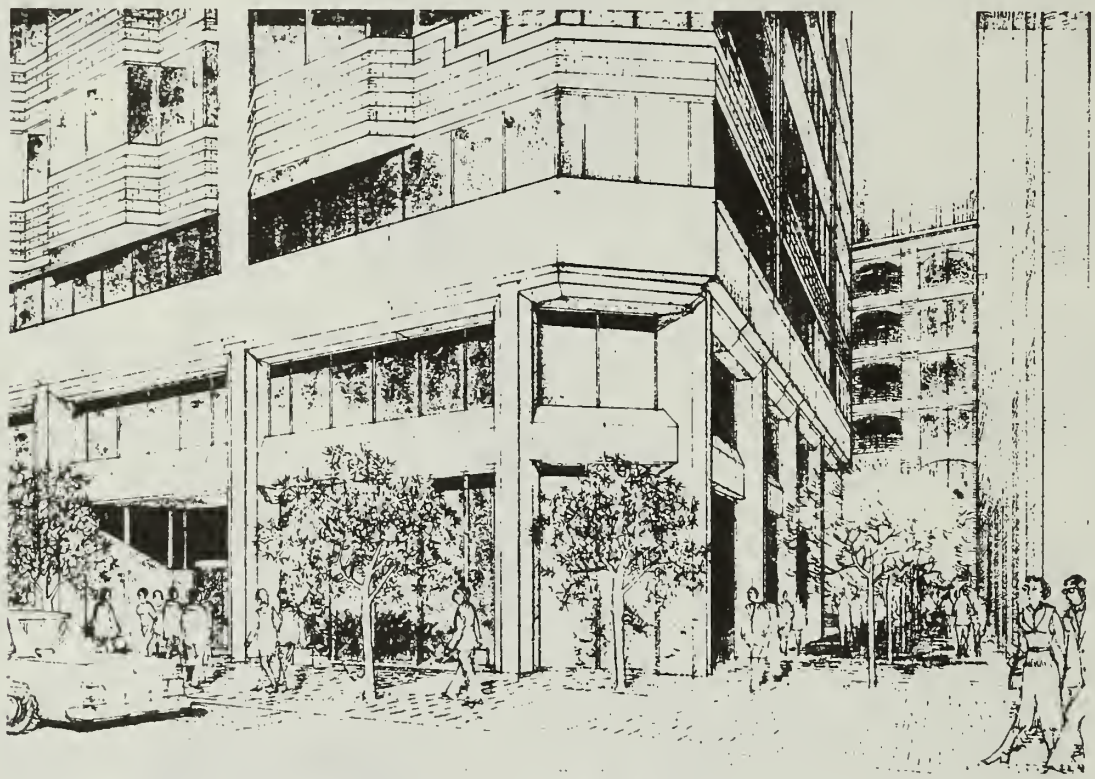
Perspective Drawing No.2. View is to the northwest from south edge of pedestrian walkway, toward east face of building base.



Perspective Drawing No.3. Adjacent east face of building base.

Perspective Drawings

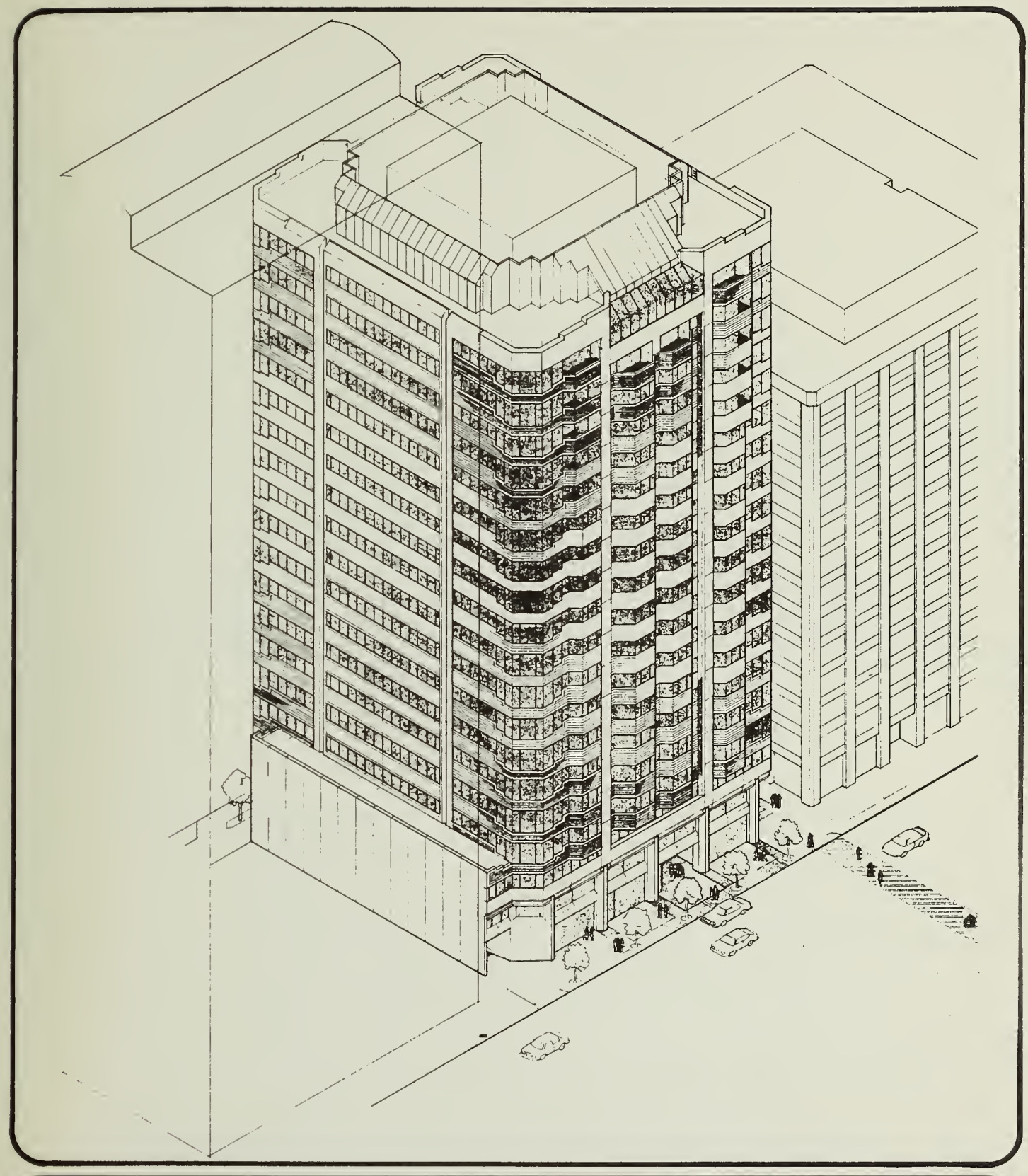
Figure No. 5



Perspective Drawing No.4. View is to east adjacent south side of building as would be seen from Main St. Howard and Spear Office Bldg. is in background.

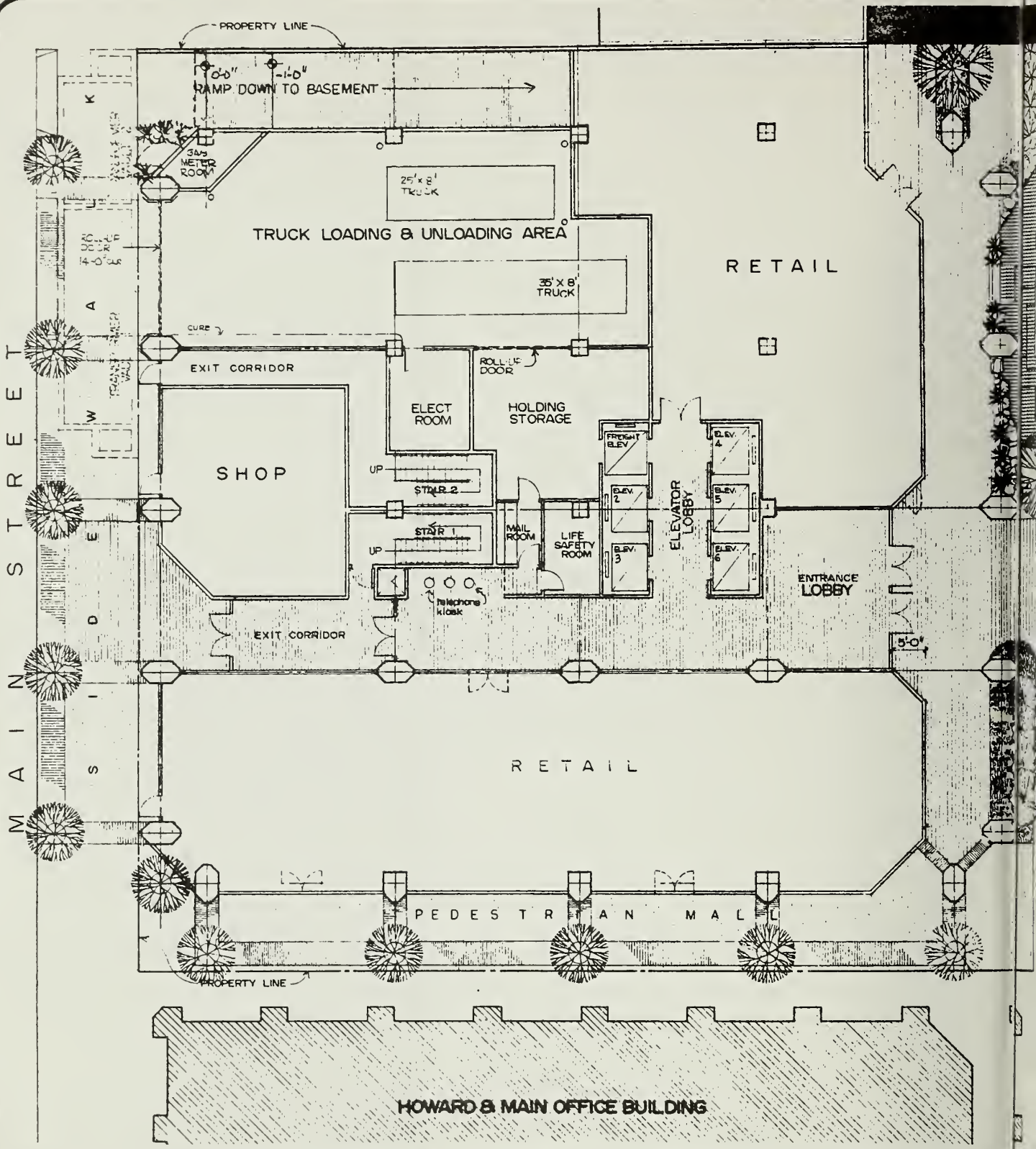
Perspective Drawing

Figure No. 6



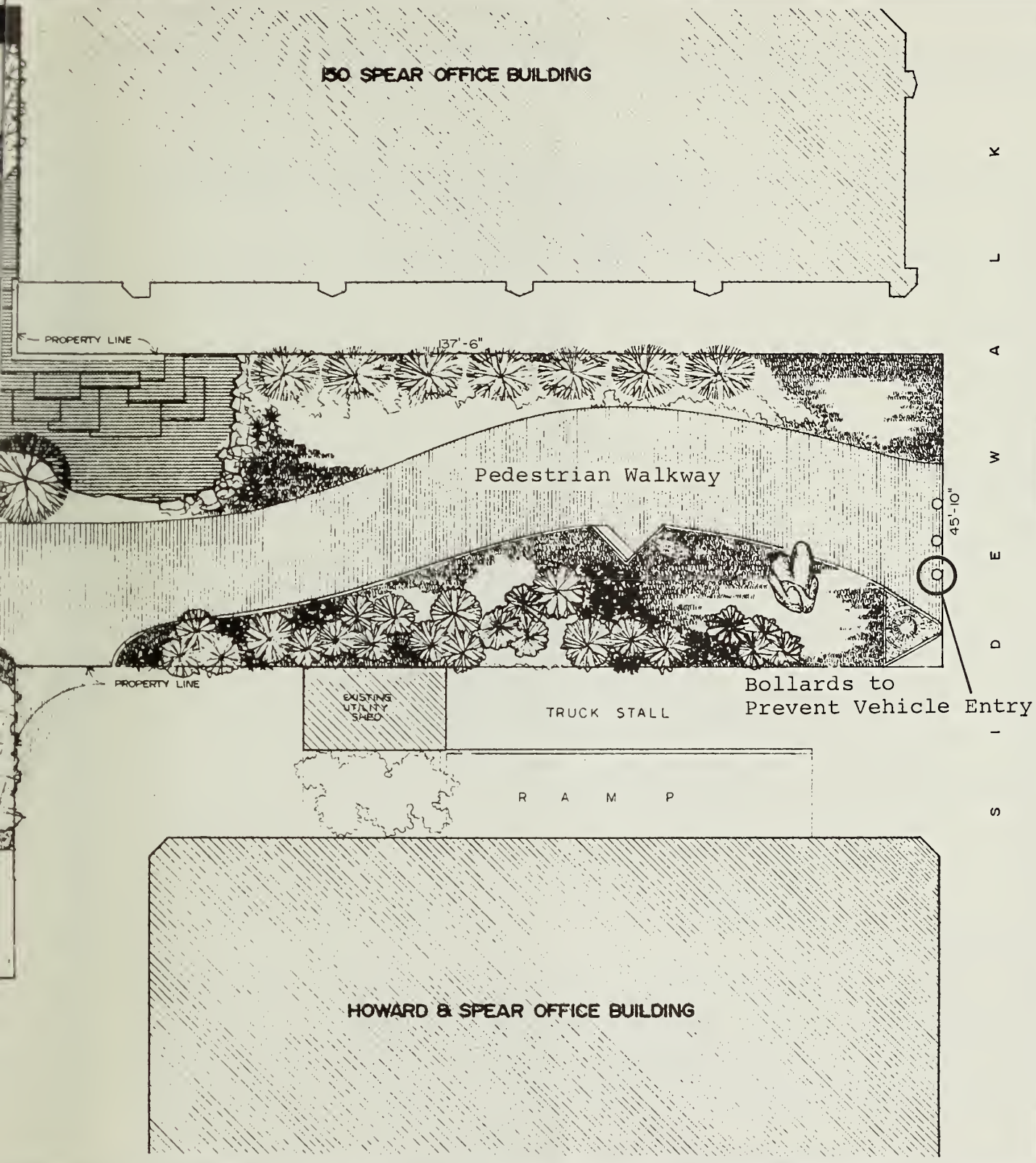
Isometric Drawing of Proposed Project, Main Street Frontage

Figure No. 7



Ground Floor Plan

Source: Jorge De Quesada, Inc., Architects

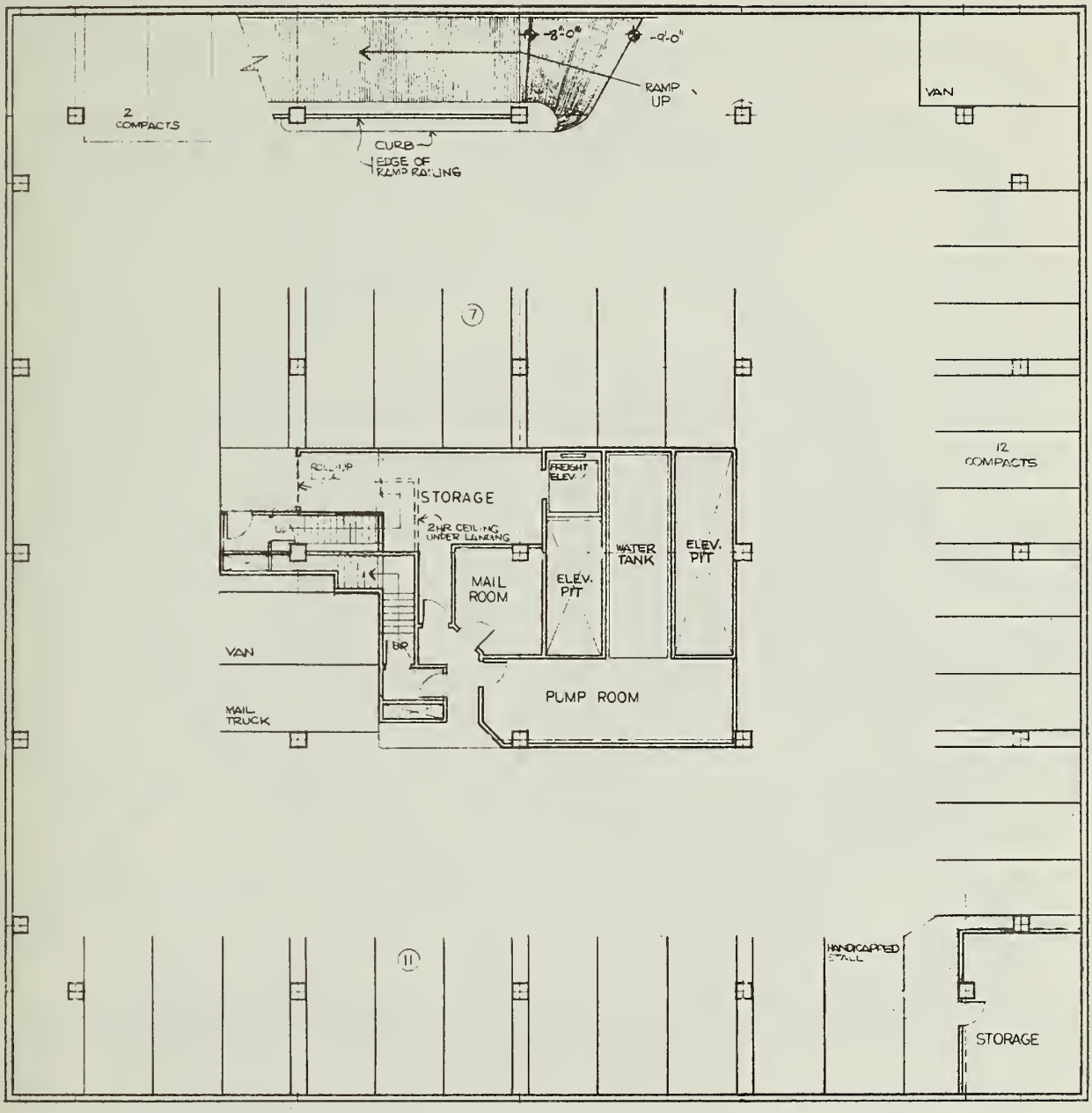


North

0 10 20 40

Scale Feet

Figure No. 8



Basement Floor Plan

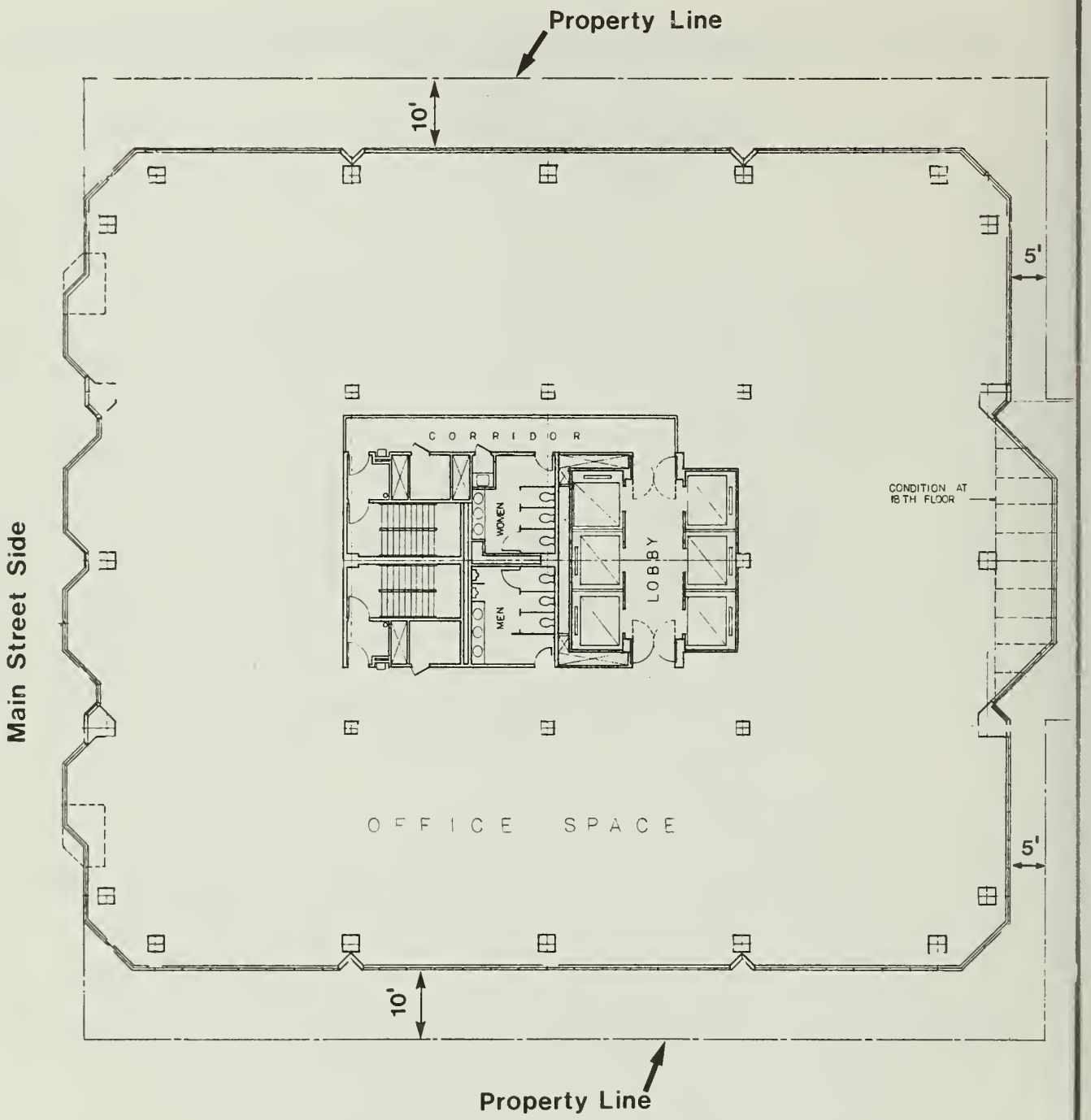
North

0 10 20 40

Scale Feet

Source: Jorge De Quesada, Inc., Architects

Figure No. 9



Typical Floor Plan

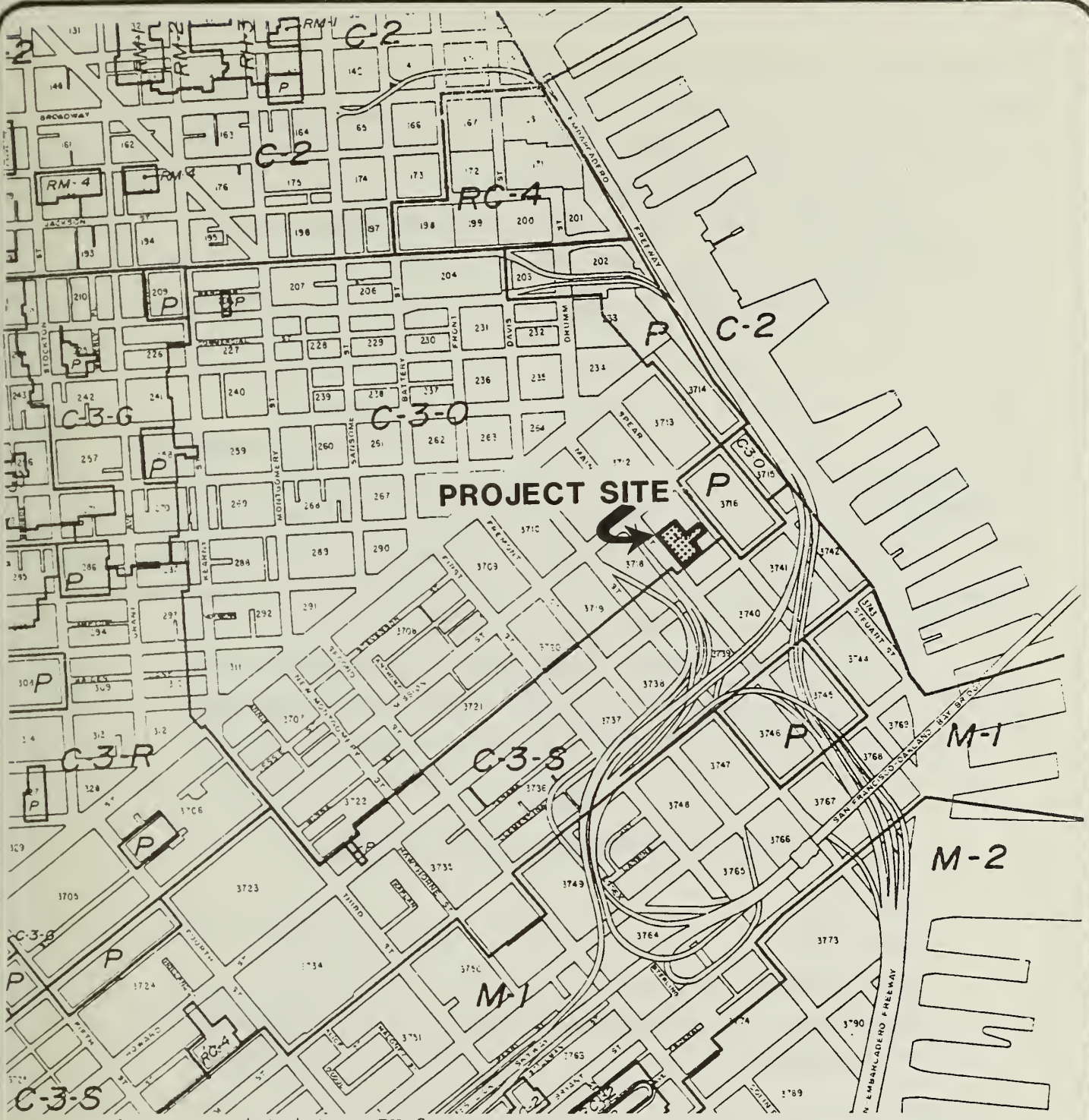
North

0 10 20 40

Scale Feet

Source: Jorge De Quesada, Inc., Architects

Figure No. 10


PROJECT SITE
C-2
RC-4
C-3-O
C-3-G
C-3-R
C-3-S
C-3-S
M-1
M-2
M-1
P
RM-4
RM-4
C-3-O
C-3-O
C-3-R
C-3-G
C-3-S
RC-4
C-2
C-2
C-2
P
P
P

of assembly and entertainment, dwellings, group housing, motels, hotels, schools and laundries are permitted uses. Up to 1 dwelling unit for every 125 square feet of lot area (202 on the project site) would be permitted.

The basic floor area ratio (FAR) allowable in the C-3-0 district is 14:1. Thus any building on the site may contain a total gross floor area of up to 14 times the area of the lot.[1] This FAR is the maximum permitted for the office and retail uses on the site under interim controls approved by the Board of Supervisors.[2] The controls temporarily limit current provisions of the City Planning Code allowing the granting of floor area bonuses for non-residential uses for the addition of such amenities as rapid transit access, multiple building entrances, plazas and setbacks and, thus, an increased FAR. Accordingly, no bonuses are being sought by the project sponsor.

The proposed project would have a total gross floor area of 306,500 square feet and, thus, an approximate FAR of 12:1. Calculations are indicated in Table 1.

TABLE 1

Square Footage and FAR Calculations

Site Area	25,208 sq. ft.
Basic FAR	14:1
Basic Allowable Area	352,912 sq. ft.
Gross Area of Proposed Building	306,500
Proposed FAR	12.2:1

---

[1]For the purposes of floor area ratio calculations the site is made up of the combined area of lots 5, 10 and 11 of Assessor's Block 3717. (The technical definition of lot appears in Section 102.12 of the City and County of San Francisco Planning Code.)

[2]City Ordinance 240-80, effective 1 July 1980. See Section VI. Alternatives, page 122, for a discussion of construction on the project site without interim bonus controls.

The height and bulk district for the site is 240-G. This allows a maximum building height of up to 240 feet, with a maximum building length of 170 feet and a maximum diagonal dimension of 200 feet above a height of 80 feet. The proposed building would be 240 feet in height and have a maximum length of 140.5 feet and a diagonal dimension of 168 feet above a height of 80 feet.

D. REQUIRED APPROVALS

The proposed project would be subject to Discretionary Review by the City Planning Commission.[1] Evaluation criteria under this process includes the protection and enhancement of the pedestrian environment; preservation of architecturally and historically significant buildings; preservation of housing; avoidance of industrial displacement; adequate and appropriate means of transportation to and from the project site; energy conservation; physical relationship of the proposed building to its environs; and effects on views from public areas and on the City skyline.

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[1]San Francisco City Planning Commission, Resolution 8474, adopted 17 January 1980, applicable to all proposals in the C-3 district.

CHAPTER II

SETTING

A. LAND USE

The project site is on the southeastern periphery of the downtown district and to the north of the downtown service area, zoned C-3-O (Commercial Office) and C-3-S (Commercial Support), respectively (Figure 11, page 15). While both areas are experiencing a trend towards increased office construction and general intensification of land use activity, the land use characteristics of the two areas differ.

Downtown San Francisco has approximately 43 million square feet of office space,[1] about 17 million square feet of which was constructed from 1970 to 1980. Highrise buildings now under construction have an average density of 1.5 million square feet per acre; recent highrise proposals, a density of 2.1 million square feet per acre.[2] Downtown (C-3-O) San Francisco is a major center for financial, corporate and professional activity in which physical proximity permits face-to-face business contacts to be made conveniently on foot. The increasing professional, office-administrative employment in this area has meant a change from a mixed blue and white-collar employment market to a white collar market emphasizing finances, administration and services.

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[1] 101 Montgomery Street Final EIR, EE 80.26, Certified 7 May 1981, page 185.

[2] Sedway/Cooke, Downtown San Francisco Conservation and Development Planning Program Phase I, 1979, page 7.

The downtown support (C-3-S) district contains a variety of support services, usually located in lowrise buildings constructed prior to the 1930s and 1940s. They include, but are not limited to, wholesaling, printing, dry cleaners, office supply and parking.

The proposed project site has in the past been used as a parking lot for about 145 cars with an attendant, and is now used as a construction site for storing materials and equipment for the 150 Spear Street office building (EE78.413). The land use mix of Assessor's Block 3717, in which the site is located, and the general site area are the result of construction trends in the South of Market C-3-O and C-3-S areas. For example, the block is occupied by several pre-1930 brick buildings (Chapter II.G., Historical Resources, page 46), with frontages on Spear Street, Mission Street and Main Street. Uses within the block include a ship chandlery proposed for removal and construction of a 21-story office building (101 Mission Street Office Building, EE79.236, Figure 18, page 43), a liquor store, printing company, restaurants, warehouse and office space. The 8-story Borel office building (Figure 19, page 44) and 13-story Howard and Main office building along Howard Street were constructed in the 1970s. The 18-story 150 Spear Street office building (EE78.413) is adjacent to the project site fronting Spear Street and is currently under construction, as noted above. Two other buildings proposed for the block include the 24-story 115-135 Main Street office building (EE 81.61) adjacent the north property line of the project site which would replace the printing company, and the 27-story Mission and Main Street office building (81.183E) at the corner of Main and Mission Streets which would replace retail businesses.

Within the surrounding area, other recent major developments include the 30-story Pacific Gateway project (EE78.207) now under construction, the 21-story 315 Howard Street office building (EE79.196) approved for construction on 13 November 1980 by the Planning Commission, and the proposed 18-story 201 Spear

Street office building for which an EIR is currently being prepared (EE80.337). The 201 Spear Street office building would be located at the southeast corner of the intersection of Howard and Spear Streets. Figures 12 and 13, pages 21 and 22, show the location of these projects and land use activities.

B. TRANSPORTATION

1. Street System

The street network and freeway ramp accessibility for the project area are depicted in Figure 14, page 23.

The project site generally has freeway accessibility to and from the East Bay and Peninsula. The most direct freeway access is at the on and off-ramps at the Mission/Beale Street and Mission/Main Street intersections (approximately 400 feet from the project site). Additional ramps are available along Fremont and Harrison Streets (within one/half mile of the project site). Automobile accessibility to and from the north bay is less direct and therefore subject to a more dispersed travel pattern. The most likely options for north bay travel are via The Embarcadero (to Broadway, Bay Street, etc.) or via Interstate 80 to U.S. Highway 101.

The street network in the project vicinity includes the east/west routes of Market, Mission, Howard and Folsom Streets and the major north/south access routes of Fremont, Beale and Main Streets and The Embarcadero. The Transportation Element of the San Francisco Comprehensive Plan designates Market, Howard, Folsom, Beale, Main and Steuart Streets and The Embarcadero as major thoroughfares.[1] The Transportation

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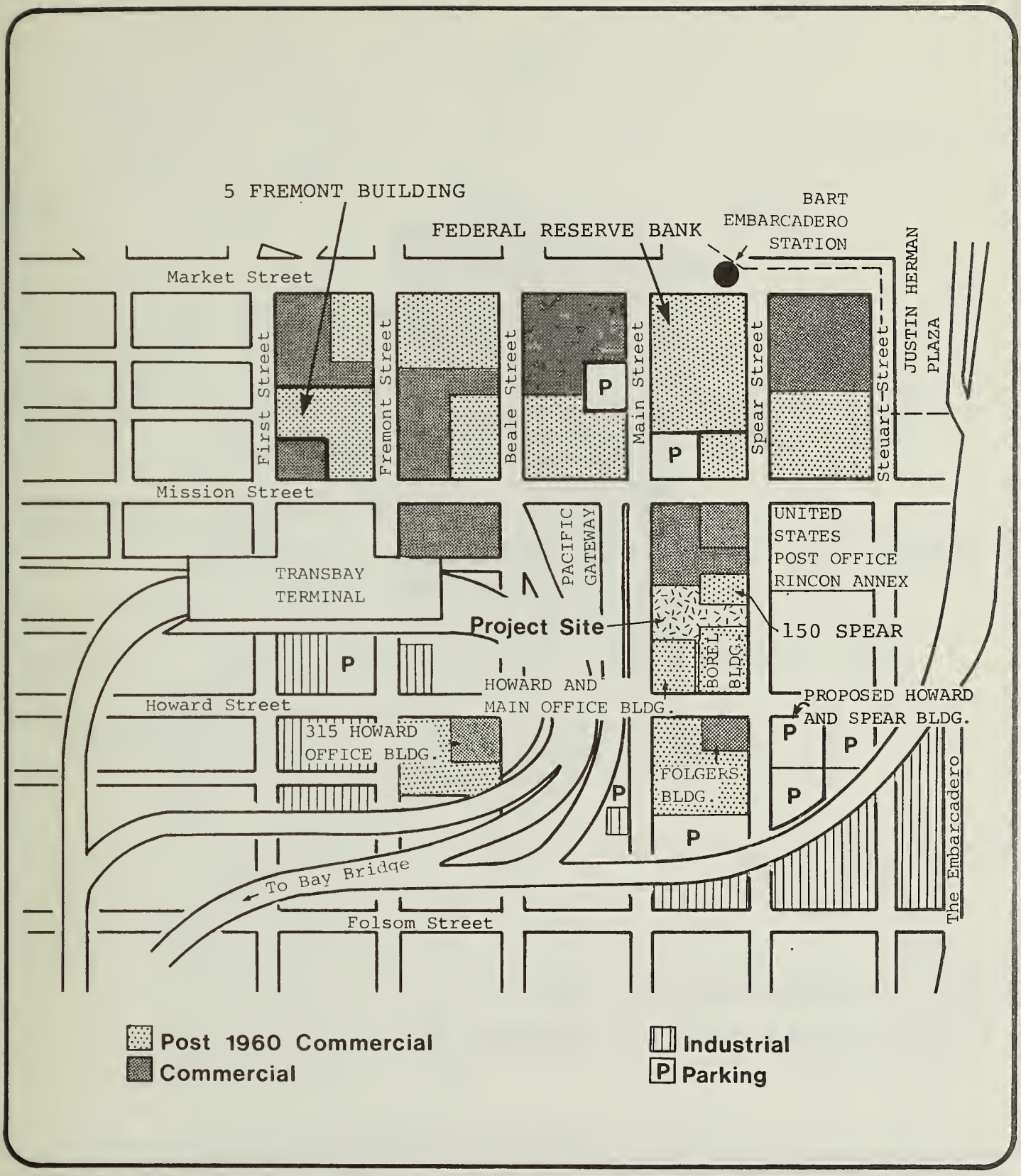
[1]Major thoroughfare is defined as ". . . a cross-town thoroughfare whose primary function is to link districts within the City and to distribute traffic from and to the freeways, a route generally of city-wide significance . . ."



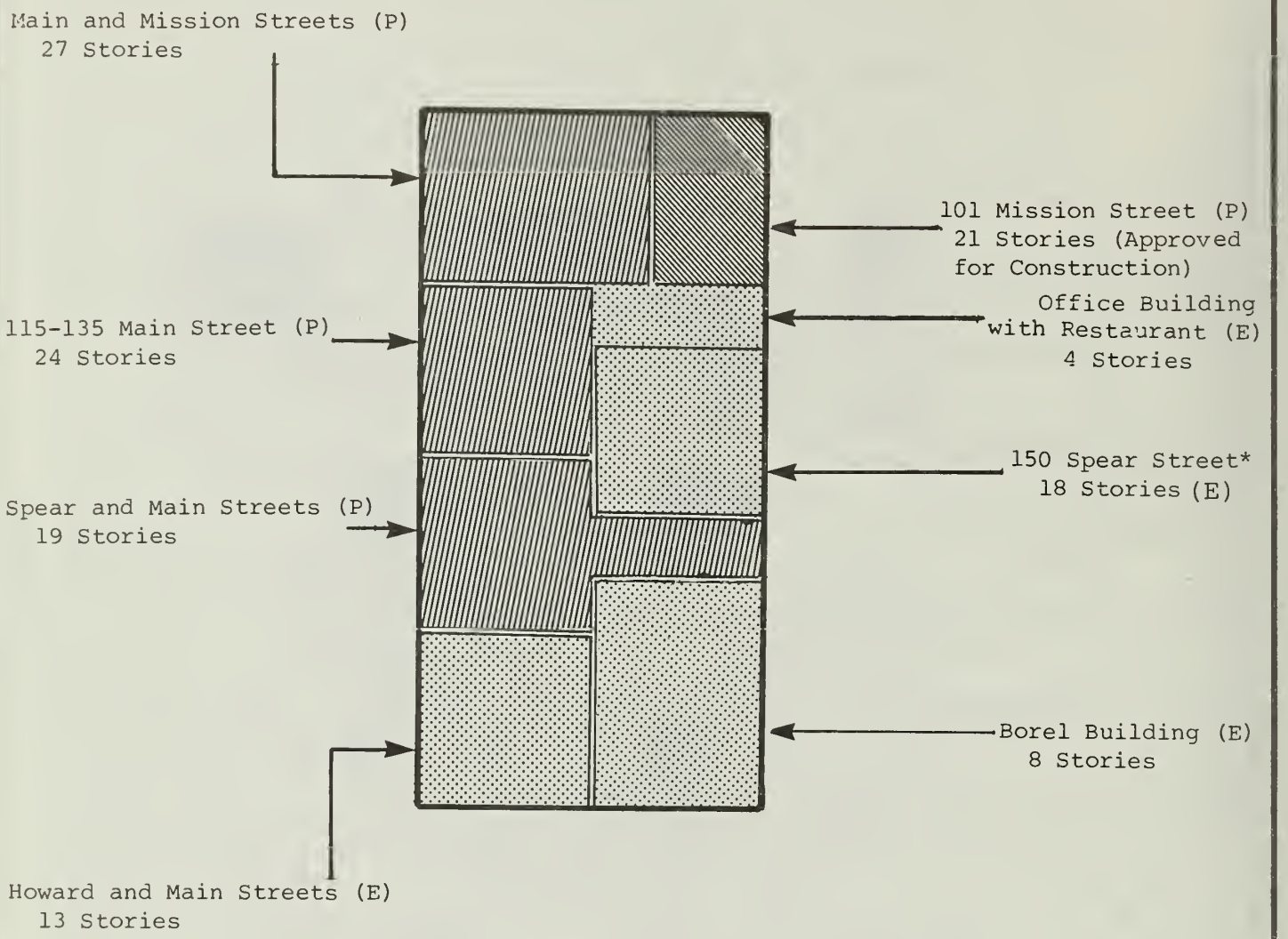
Land Use Map

(See Figure 13 for a detailed map of existing and proposed buildings on the project block)

North
Not to Scale

Source: Field Check by EIP Corp.

Figure No. 12



Legend

Proposed building (P)

Existing building to remain (E)

*Under construction

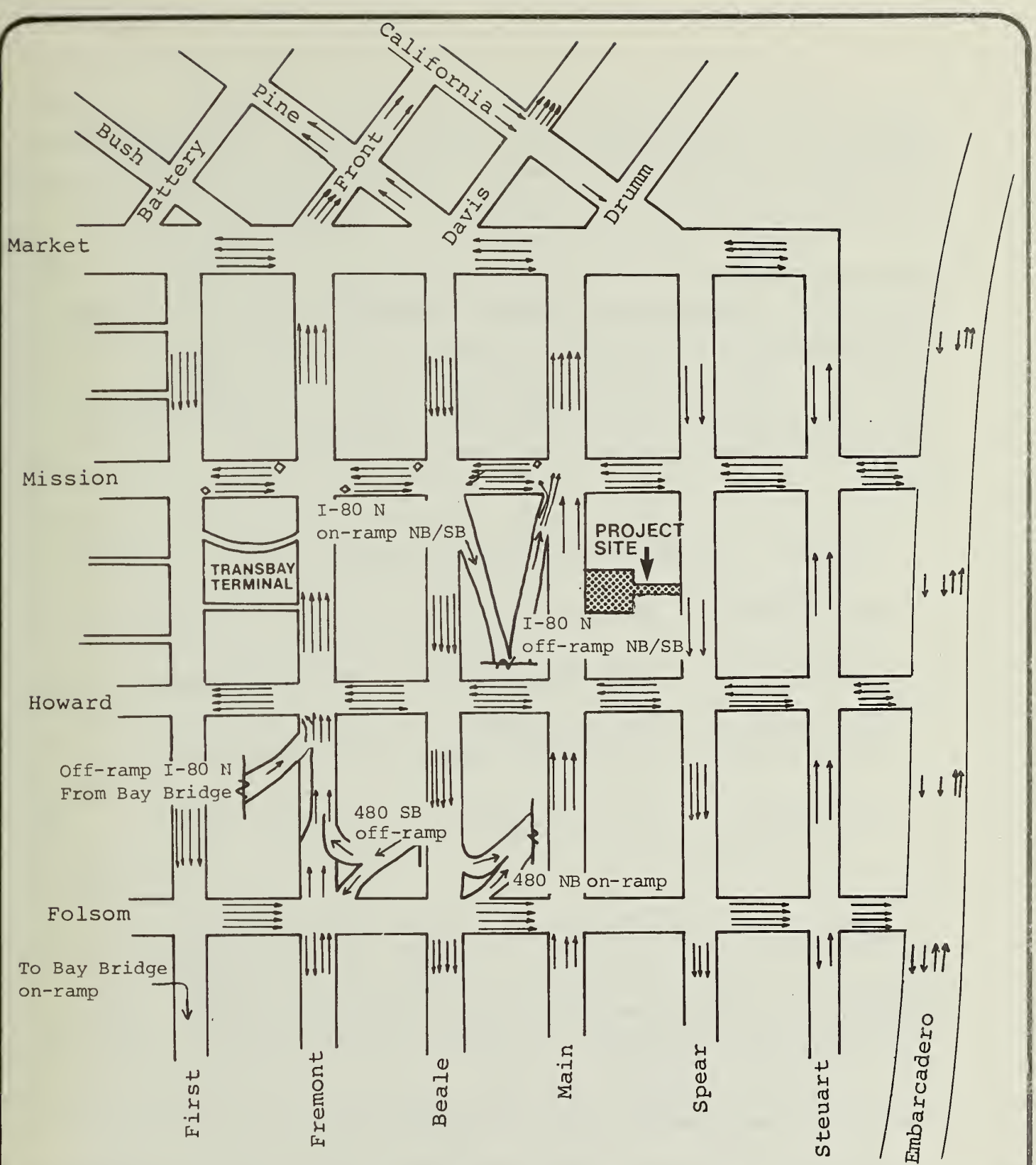
(Note: only existing buildings to remain are shown.)

Existing (E) and Proposed (P) Buildings on Block 3717

North
Not to Scale

Figure No. 13

Source: EIP Corporation



Source: Field observations by EIP Corp.

Street Network

Note: Turning movements shown in Appendix A, pages A-1 - A-4.

North

Legend:

◇ Diamond Lane: Buses and Right Turns Only, 7am to 6pm

NB = Northbound

SB = Southbound

⟶ = Traffic Lane

Not To Scale

Figure No. 14

Element also designates Market, Mission, Fremont and First Streets as "Transit Preferential Streets." By definition, priority is given to transit vehicles over automobiles on these streets.

Because a specific analysis of traffic flow quality examines the peak traffic flow at signalized intersections, peak hour turning movement counts have been obtained[1] for 4 key intersections near the project site. Using a "critical movement analysis"[2] the service levels of the intersections have been calculated as follows (see Appendix A, page A-1, for calculation sheets and service level definitions).

Service Level Definitions

Mission/Spear	(p.m. peak hour)	- Service Level A
Mission/Main	(a.m. peak hour)[3]	- Service Level B
Mission/Beale	(p.m. peak hour)	- Service Level C
Main/Howard	(p.m. peak hour)	- Service Level A

---

[1]Counts at Mission/Main and Mission/Beale conducted by Traffic Engineering Division, S.F. Dept. of Public Works on 30 April 1981 and 2 February 1981, respectively. Counts at Mission/Spear obtained from EIR for proposed 101 Mission Office Building Project (EE 79.236, certified 27 August 1981). Counts at Main/Howard conducted on 30 October 1980 as a part of this EIR (see Appendix A, page A-1).

[2]"Critical Movement Analysis" described in Circular No. 212, Transportation Research Board, January 1980.

[3]The a.m. peak hour represents peak traffic flow at this intersection.

Because traffic flows during the peak 15 minutes are 10-15% higher than average flows throughout the peak hour, the intersections of Mission/Main, Mission/Beale and Main/Howard operate approximately 1 service level lower during these peak 15-minute periods.

While these service levels indicate stable traffic flow conditions, a key constraint on vehicle access is the down-town freeway network. The Interstate 80 and Highway 101 freeways are currently operating at jammed conditions (typified by Service Level F) during the evening peak hour.[1] The peak hour generally occurs within the 3-6 p.m. period, but the specific peak hour varies daily (generally 4:30 to 5:30 p.m.). The peak hour is 10-20% higher than the other 2 hours in the 3-6 p.m. period. With the cumulative downtown development approved through October 1981, the peak hour traffic flows would probably extend throughout the 3-6 p.m. period. Thus, the overall congestion on the freeway can affect the flow on specific freeway links or individual ramps. The 101 corridor north (Van Ness, Franklin, Lombard, Golden Gate Bridge, etc.) also operates at capacity (service level E) during the p.m. peak hour.

There are currently no plans for increasing the capacity of the various freeways and state highways serving the downtown area.[1]

2. Transit

The project site is accessible via a number of public transit services. Local routes are provided by the San Francisco Municipal Railway (MUNI) and regional service is available via BART, A.C. Transit (AC), Golden Gate Transit (GGT), San Mateo County Transit (SamTrans), Greyhound, and Southern Pacific (SP).

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[1]Scott MacCalden, Senior Engineer, Highway Operations Branch, Caltrans, telephone conversation, 28 December 1981.

San Francisco Municipal Railway. Muni operates a total of 38 routes within walking distance (2,000 feet) of the proposed site (Table 2, page 26).

City staff have provided patronage statistics for most downtown routes, projected to 1983. The proposed project and other approved projects would be occupied in 1983 and that year is an appropriate base for analyzing transportation impacts. The projects include existing patronage as well as increased patronage attributed to other committed development in the downtown area. In Table 7, page 60, the p.m. peak hour patronage, capacity and load factors[1] are shown for the lines. As the table indicates, a number of lines would operate over capacity in 1983. Because capacity is based upon 150% of the available seats, any load-factor over 1.00 reflects crowded conditions. (These statistics do not include a planned 10-15% increase in Muni capacity).

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[1]"Load factor" is defined as the patronage divided by the maximum capacity.

TABLE 2

MUNI SERVICE SUMMARY

ROUTE DESIGNATION	
1 - California	Service linking downtown with Western Addition and Richmond
1X - California Express	Service linking downtown with Richmond, weekday peak hour only
2 - Clement	Service linking downtown with Western Addition and Richmond
3 - Jackson	Service linking downtown with Pacific Heights and Western Addition
4 - Sutter	Service linking downtown with Western Addition, peak hour only
5 - Fulton	Service linking Transbay Terminal and downtown with Richmond
6 - Parnassus	Service linking Transbay Terminal and downtown with Sunset
7 - Haight	Service linking downtown with Haight-Ashbury, weekdays only
8 - Market	Service linking downtown with Mission
9 - Richland	Weekday service linking downtown with Mission and Bernal Heights
11 - Hoffman	Service linking downtown with Upper Market and West Portal
12 - Ocean	Service linking downtown with Outer Mission and City College
14 - Mission	Service linking downtown with Mission, Outer Mission, and Daly City
14GL & 14X - Mission	Express and limited-stop service linking downtown with outer Mission and Daly City

TABLE 2 (cont'd)

15 - Third	Service linking Wharf, downtown, Bayview and City College
21 - Hayes	Service linking downtown with Richmond
27 - Noe	Service linking downtown with Mission and upper Noe Valley
31 - Balboa	Service linking downtown with Richmond
31X - Balboa Express	Express service linking downtown with Richmond
32 - The Embarcadero	Daytime service linking South of Market and downtown with Aquatic Park
38 - Geary	Service linking Transbay Terminal and downtown with Western Addition and Richmond
38L, 38AX & 38BX - Geary	Express and limited-stop service linking downtown with Richmond
40X - Commuter	Express service linking S.P. Depot with South of Market area.
41 - Union	Service linking Mission with downtown, Chinatown and North Beach
42 - Downtown Loop	Service linking downtown with S. P. Depot, Civic Center and Fisherman's Wharf
55 - Sacramento	Service linking downtown with Western Addition
61 -	California Cable Car
71 - Haight-Noriega	Service linking downtown with Haight and Sunset (during weekday peak periods only)
72 - Haight-Sunset	Service linking downtown with Haight, Sunset and Stonestown (during weekday peak periods only)
80X Gateway Express	Service linking Gateway Center with downtown and S. P. Depot
J, K, L, M, and N MUNI METRO	Light-rail service linking downtown with Upper Noe, Sunset, Parkside and Ingleside districts

TABLE 3

Projected 1983 MUNI Patronage
(Incorporated with Table 7, page 60)

- BART. BART staff[1] has provided the following p.m. peak hour operating statistics (existing 1981 conditions) for outbound trains at their peak load points:

	East Bay	Daly City
Seats	9,000	6,400
Passengers	11,646	6,408
Average load factor	1.29[2]	1.00[2]

With heavier ridership during portions of the peak hour, certain peak trains experience load factors which are approximately 10% higher.

- AC Transit. AC Transit[3] currently operates approximately 200 buses outbound from the Transbay Terminal during the p.m. peak hour. Based on a capacity of 125% of vehicle seating (AC policy accepts 25% standees) and an average of 50 seats per bus, a total capacity of 12,500 passengers is available. With a current peak hour patronage of 9,000 during the peak runs, the overall capacity reserve is 3,500. However, certain peak runs have higher load factors and therefore little excess capacity.

Golden Gate Transit. Golden Gate Transit[4] currently operates 147 buses out of the downtown area during the afternoon peak hour, about 120 buses on the financial district routes and

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[1]John Stamas, BART Planning Staff, personal communication, 5 February 1981.

[2]BART defines capacity as the available seating on trains. The load factors are total patronage divided by available seats. A load factor of 1.00 reflects all seats occupied with no standees.

[3]Gene Gardiner, Assistant Manager, Division of Planning and Research, AC Transit, telephone conversation, 27 March 1981.

[4]Alan Zahradnik, Golden Gate Transit Planning Staff, telephone conversation, 27 March 1981.

27 buses on the Civic Center routes. On the average, these buses run at their design capacity level as set by Golden Gate policy, i.e., at seating capacity. Golden Gate Transit allows a maximum capacity of 55 passengers per bus, (45 seats plus 10 standees) which equates to 8,085 peak hour riders. Current peak-hour ridership out of downtown is estimated at 6,620 passengers. It should be noted that on certain peak runs, more than 10 standees may be present.

SamTrans and Southern Pacific.[1] There are currently 12 SamTrans buses leaving the downtown area during the afternoon peak hour. The buses operate at about 90% of seating capacity, corresponding to peak-hour ridership of about 510 passengers. With 25% standees acceptable to SamTrans, it is estimated that there is a reserve capacity for 240 passengers. SamTrans staff projects that this reserve capacity will be used up by 1982.

The SP commute service has recently been incorporated into an operating agreement between the railroad and the State of California (through CalTrans). Current service provides 11 southbound trains with 9,000 seats during the p.m. peak hour. The current load factor (based upon one seat per passenger) is 0.83, or approximately 7,470 passengers.

3. Parking

The proposed project site is within the "Downtown Core Automobile Control Area" as designated in the San Francisco Master Plan.[2] Essentially, the goal for this area is to limit parking and thereby reduce the intrusion of automobile travel. South of the proposed site is a parking belt area, also designated

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[1]SamTrans data based on telephone conversation with Larry Stueck, SamTrans staff, 27 March 1981. Southern Pacific data based on telephone conversation with John Lai, CalTrans staff, 27 March 1981.

[2]City and County of San Francisco, "Revisions to the Transportation Element of the Master Plan Regarding Parking," 20 January 1977.

in the City's Master Plan. This belt is defined as an area "within the Downtown Commercial District which may be appropriate for new short-term parking facilities subject to criteria of Citywide Parking Plan."

A number of parking occupancy studies have been conducted in this area. As part of the EIR on the 5 Fremont Center Project (EE80.268),[1] parking surveys were conducted on 7-9 July 1980 in the area bounded by The Embarcadero, Harrison Street, Third Street, Kearny Street and Washington Street. Within this area, a total of 15,020 long-term (greater than 6 hours) off-street spaces are available (including the 110-space surface lot on the project site), and the average occupancy is approximately 89% (about 13,350 spaces were occupied and 1,670 were vacant on the dates of the survey). Two other recent EIR documents contained similar parking inventory and occupancy surveys in the same basic area south of Market Street. In the EIR for the Pacific Gateway Office Building Project,[2] off-street spaces were found to have an occupancy rate of 90-100%, while on-street spaces were observed to have an occupancy rate of 85-95%. The EIR for the 315 Howard project[3] found 90% occupancy rates for both the off-street and on-street spaces surveyed. The consensus of the various surveys is that on and off-street parking is nearly fully utilized during the day.

On-street truck loading zones are available (in close proximity to the project site) on Main and Spear Streets. Based upon field observations,[4] these zones have space

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[1]San Francisco Department of City Planning, Final Environmental Impact Report, 5 Fremont Center (EE80.268), certified 12 March 1981.

[2]San Francisco Department of City Planning, Final Environmental Impact Report, Pacific Gateway Office Building Project (EE78.61), certified 26 July 1979.

[3]San Francisco Department of City Planning, Final Environmental Impact Report, 315 Howard Street Office Building, (EE79.196), certified 21 August 1980.

[4]Field observations by EIP Corporation, 27 and 30 October 1980.

available for 1-2 vehicles during the a.m. peak period (7-9 a.m.). During the midday (11:30 a.m.-1:30 p.m.) and p.m. (4-6 p.m.) peak periods,

the zones were fully occupied. However, the majority of the vehicles occupying these zones appear to be passenger cars which are illegally parked. Delivery vehicles were observed "double parking" during midday and p.m. peak periods.

4. Pedestrian and Bicycle Access

Pedestrian Conditions. Pedestrian volumes on adjacent sidewalks and crosswalks were counted during both the midday (11:30 a.m. - 1:30 p.m.) and evening (4:00 p.m. - 6:00 p.m.) peak periods.[1] The physical conditions, average flows during these periods and peak 15-minute flow rates are depicted in Figure 15, page 33.

Department of City Planning[2] staff has determined that an accepted methodology for describing pedestrian flow quality is contained in Urban Space for Pedestrians by Pushkarev and Zupan.[3] This source cites the following characteristics of pedestrian flow:

Description	Flow Rate (persons/minute/foot of walkway width)
Open	less than 0.5
Unimpeded	0.5 - 2
Impeded	2 - 6
Constrained	6 -10
Crowded	10 -14
Congested	greater than 14

The existing pedestrian flows are generally in the unimpeded range although the Main Street sidewalk north of the

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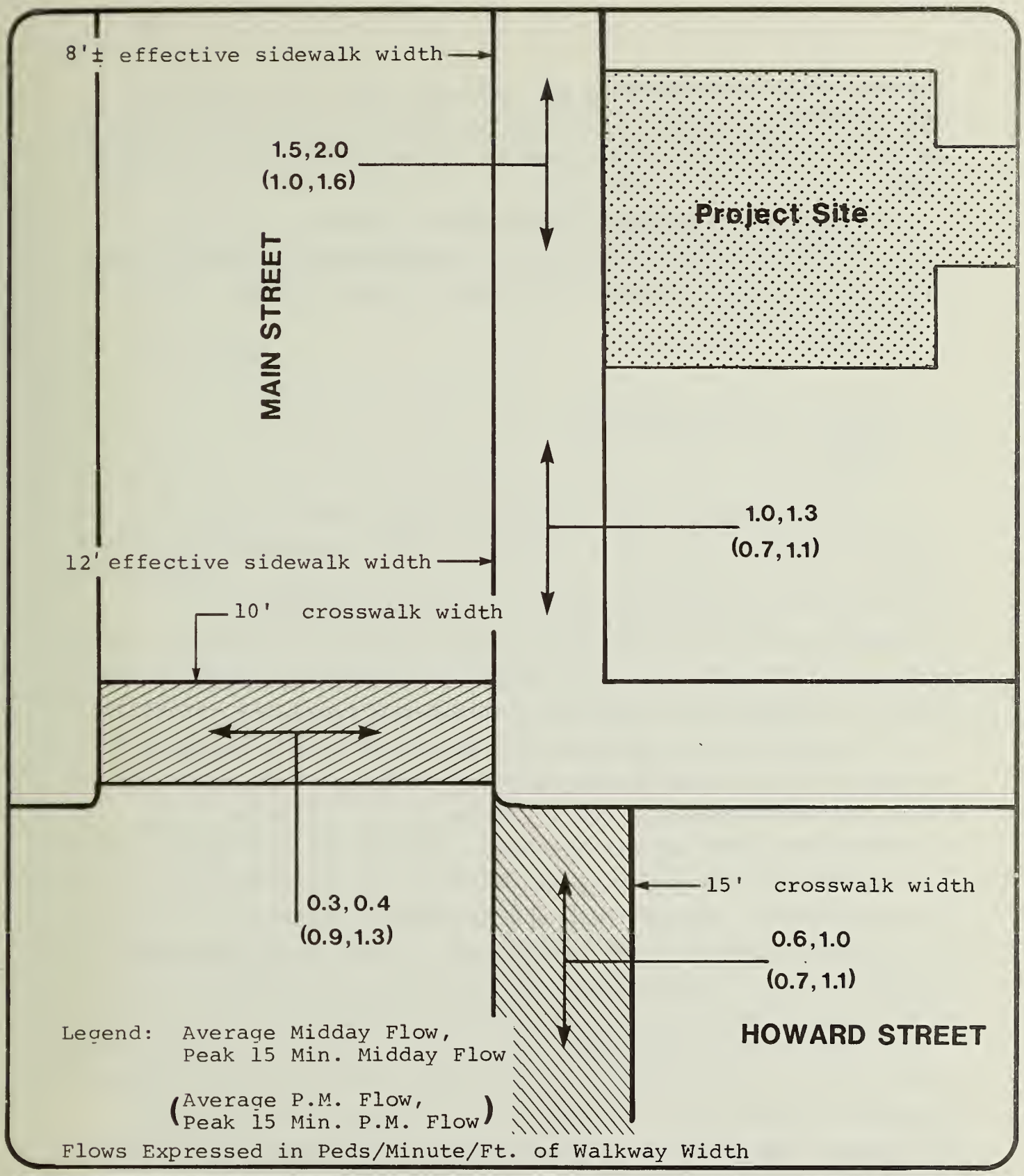
[1]Counts conducted by EIP Corporation, 30 October 1980.

[2]San Francisco Department of City Planning, "Guidelines for Environmental Evaluation - Transportation Impacts;" June 1980, revised October 1980.

[3]Pushkarev and Zupan, Urban Space for Pedestrian, MIT Press, 1975.



Existing Pedestrian Conditions

North
Not to Scale

Source: Field observations by EIP Corp.

Figure No.15

project site is approaching the impeded range. The degraded pedestrian conditions in this area are due to the encroachment of planters, parked cars, etc., which reduce the effective sidewalk width.

Bicycle Conditions. In the vicinity of the project site, the City's Master Plan has designated Market Street, Spear Street and The Embarcadero (from Spear Street to Berry Street) as bicycle routes.

C. CLIMATE AND AIR QUALITY

1. Climate

The climate of San Francisco is dominated by the breezes characteristic of a marine climate. Because of the steady stream of marine air, there are few extremes of heat and cold. Temperatures exceed 90 degrees Fahrenheit an average of once a year and drop below freezing an average of less than once a year. The warmest month is September, with an average daily maximum of 68 degrees Fahrenheit.

Winds in San Francisco are generally from a westerly direction and are persistent from May to August. During the rainy season (October to April), however, the strongest winds flow from the south as well as from the west and northwest.

Wind tunnel tests of the project site as it exists (see Appendix B, page A-7) showed that the site has low winds for northwest and west wind directions. The site is generally downward of the Financial District and Market Street highrise area and is sheltered by these upward buildings.

Existing sun and shade patterns for 8 a.m., 1:00 p.m. and 4 p.m. on the first day of each season were prepared (see Appendix B, page A-7). During winter, shadows resulting from the project and other structures are long and pedestrian areas adjacent the project block are shaded along Spear Street, Main Street and Mission Street. A similar

pattern was found for spring and fall, but project shadows did not extend across Spear or Mission Streets as far as during the winter, except at the Mission/Spear Street intersection. In summer, shadows would affect portions of the sidewalks along Mission Street and Spear Street, but do not extend across these streets at 1 p.m.

2. Air Quality

San Francisco's persistent summer wind and its upwind position in relation to major pollutant sources give it possibly the cleanest air in the Bay Area. Despite these advantages, there are periods, most often in fall and winter, when the air becomes stagnant. At these times the entire Bay Area has poor air quality.

The prevailing wind pattern in the Bay Area results in a deterioration of air quality east and south of San Francisco. Table 4, page 36, shows that areas downwind of San Francisco have more severe air quality problems. The main San Francisco monitoring site is at the Bay Area Air Quality Management District offices at 939 Ellis Street, about 1½ miles west of the project site.

The data in Table 4, page 36 are representative of the project site with the exception of carbon monoxide, since carbon monoxide is influenced by local traffic. The primary source of lead and carbon monoxide is automobile exhaust. In the past, measured levels have exceeded the state and federal standards for lead in much of the Bay Area. As use of lead-free gasoline has increased, atmospheric concentrations have decreased. In 1980, no violations of either state or federal standard were recorded within the Bay Area.

While San Francisco's air quality is better than most of the Bay Area, state and federal standards are not met in the Bay Area (Table 4, page 36). As a result, an Air Quality

TABLE 4

Number of Days Selected Pollutants Exceeded State or Federal Standards, 1980[1]

Monitoring Site	Ozone[2]	Nitrogen Dioxide	Carbon Monoxide	Suspended Particulates	Sulfur Dioxide
San Francisco (23rd Street)	0.0	0	0	6	0
Redwood City	0.8	0	0	1	0
San Jose	6.2	1	15	15	0
San Rafael	0.7	0	0	1	0
Fremont	5.6	0	0	8	0
Livermore	2.2	0	-	9	0

Source: Bay Area Air Quality Management District, Air Currents, Vol. 24, No. 4, March 1981.

[1] The State standards are specific concentrations and durations of air pollutants that reflect the relationship between concentration and undesirable effects. They are target values, and no timetable exists for their attainment. The Federal primary standards represent levels of air quality necessary for protection of public health, with an adequate margin of safety. The provisions of the Clean Air Act as amended require that by December 31, 1987 the Federal standards should not be exceeded more than once per year.

[2] In early 1979 the U.S. Environmental Protection Agency adopted a new oxidant standard. The previous standard of 0.08 parts per million for all oxidizing substances was replaced by a standard of 0.12 parts per million for ozone alone, the most prevalent oxidant. The new Federal standard is based on a 3-year average, known as the Expected Annual Exceedance (EAE). An EAE of 1.0 is considered as compliance with the standard.

Maintenance Plan (AQMP) has been prepared by the Association of Bay Area Governments (ABAG) and other governmental agencies.[1]

The 1979 Air Quality Plan contains a strategy for long-term attainment and maintenance of air quality standards. The plan includes measures to reduce emissions from stationary sources and automobiles, and proposed transportation measures to reduce automobile emissions. The air quality problems addressed in the plan are photochemical oxidants, carbon monoxide, and suspended particulates.

D. NOISE

Along Main Street, the noise environment is dominated by Main Street traffic and the Main Street off-ramp from the State Route 480 freeway network. The Spear Street frontage noise environment is affected by traffic on Spear Street. To quantify the noise environment at the project site, noise measurements were made on Monday, 20 October 1980 and Tuesday, 21 October 1980 at two locations (Figure 16, page 38).

Measurement Positon No. 1 was about 40 feet east of the centerline of Main Street at about the center of the Main Street side of the project site. During the afternoon measurement, traffic on the Main Street off-ramp was light. The dominant noise sources were diesel SamTrans and Muni buses on Main Street (69 to 73 dBA), trucks on Main Street (71 dBA), and cars on Main Street.[2] A front loader at the Pacific Gateway project

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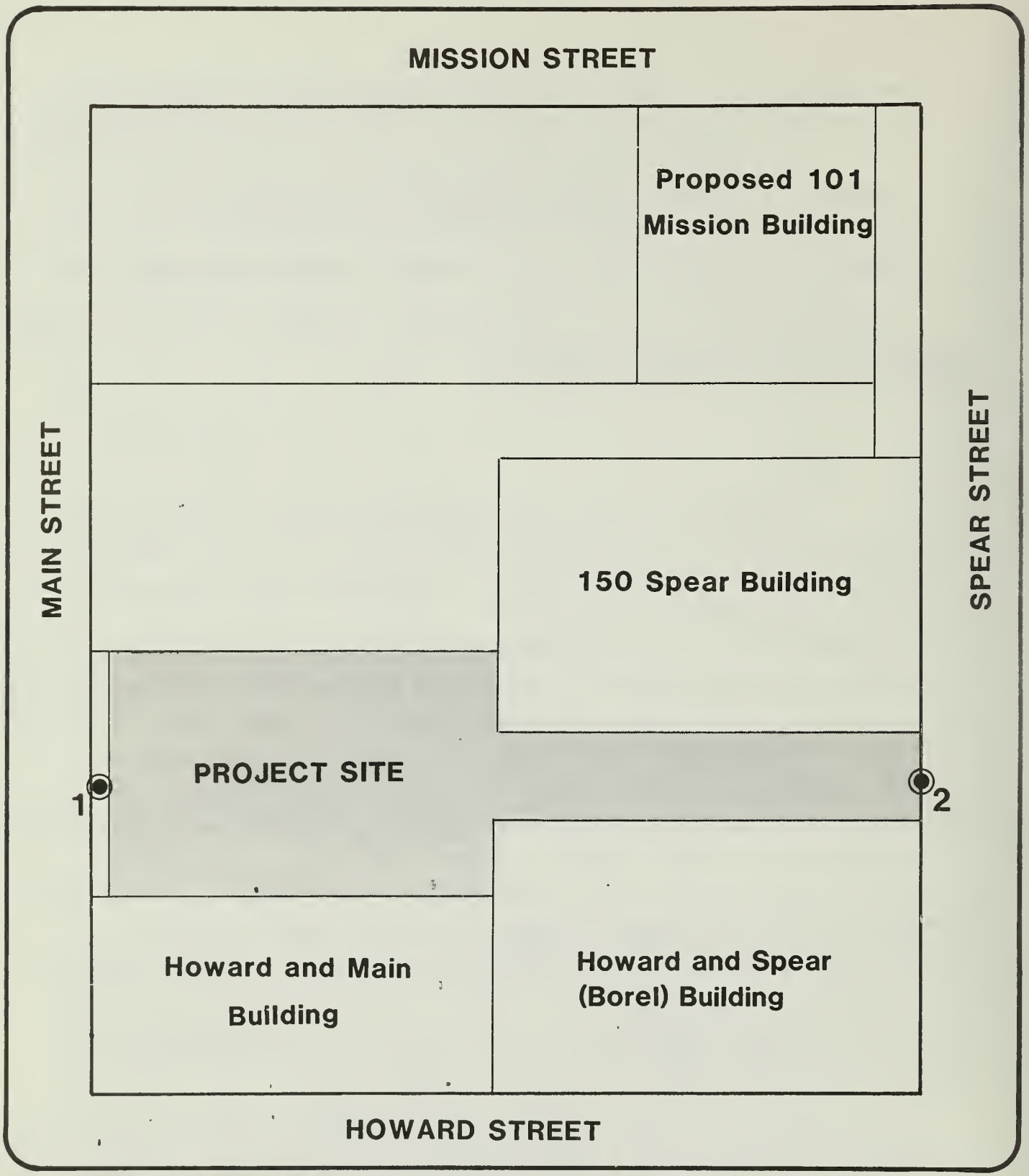
[1]Association of Bay Area Governments, 1979 Bay Area Air Quality Plan, January 1979.

[2]The decibel (db) as used in this report is the unit of sound level referenced to the sound pressure corresponding to the threshold of hearing. The A-weighted decibel (dBA) accounts for how the human ear responds to sounds of different frequencies. The equivalent sound level (Leq) is the steady A-weighted level which would generate the same acoustic energy as the time-varying environmental noise. L_{10} is the sound level exceeded 10 percent of the time. The day-night average sound level (Ldn) is a 24-hour average with 10 dBA added to the levels between 10 p.m. and 7 a.m. Refer to Appendix C, page A-19, for a discussion of the fundamentals of environmental acoustics.



Noise Measurement Locations

North

Not to Scale

Source: Charles Salter and Associates, Consultants in Acoustics

Figure No.16

site west of Main Street generated instantaneous maximum levels of 69 dBA and an emergency vehicle siren generated an instantaneous maximum level of 73 dBA as it passed Main Street on Mission.

During the morning measurement there was heavy traffic on the Main Street off-ramp; however, traffic was slow and resulting noise levels were lower than if traffic were moving at a faster rate at the measurement location. Trucks generated instantaneous maximum levels of 77 dBA on Main Street. A front loader at the Pacific Gateway construction site generated instantaneous maximum levels of 77 dBA.

Measurement Position No. 2 was on the Spear Street frontage of the project site about 40 feet west of the Spear Street centerline across from the Rincon Annex loading docks. Spear Street traffic controlled the noise environment with instantaneous maximum levels of about 67 dBA generated by motorcycles and light trucks. A helicopter flying over the site generated an instantaneous maximum level of 67 dBA. There was little activity at the Rincon Annex during the afternoon measurement. On Tuesday morning, Spear Street traffic again controlled the noise environment and a mail truck on Spear Street generated an instantaneous maximum sound level of 74 dBA. Hammering and drilling at the 150 Spear Street construction project generated sound levels of about 69 dBA. The Embarcadero Freeway traffic was noticeable in the morning and contributed to the background sound levels. The data are summarized in Table 5, page 40.

TABLE 5

15-Minute Ambient Noise Measurements (dBA)

Location No.	Date & Time	L_{eq}	L_1	L_{10}	L_{50}	L_{90}	L_{99}
1	20 October 1980 4:15 PM	66	72	69	64	62	61
1	21 October 1980 9:10 AM	68	77	71	66	63	61
2	20 October 1980 4:49 PM	65	70	67	64	62	61
2	21 October 1980 8:50 AM	67	72	70	67	66	65

The Transportation Noise Section of the Environmental Protection Element of the Comprehensive Plan of the City and County of San Francisco contains thoroughfare noise levels for the year 1974 (which represents existing levels). The noise levels in this document are in terms of Ldn. The Ldn along Main Street is shown to be 70 dBA. The Spear Street Ldn is not given. Analysis for the Main and Spear Street Building corroborates the Main Street Ldn since the peak-hour Leq is typically about equal to the Ldn. Based on the measured data for this project and the 101 Mission Street Building EIR (EE79.236, certified 27 August 1981), the Ldn along Spear Street adjacent to the project site is calculated to be about 70 dBA also.

E. VISUAL QUALITY AND URBAN DESIGN

The proposed project site is in an area south of Market Street that is undergoing change due to recent and current construction (Figure 17, page 41 and Chapter II.A.,

View east of project site as seen from Main Street. Rincon Annex appears in the background. Construction equipment is for the 150 Spear Street Office Building.

Project Area Photograph

Source: EIP Corporation

Figure No.17

Land Use, page 18).[1] Previously, the project area was primarily characterized by pre-1930, 2- to 3-story commercial/office buildings, while today older buildings are being removed to make way for highrise structures. Vegetation is limited to street trees and landscaped plazas associated with the highrise buildings.

The 2 to 3-story brick buildings on the block contiguous to the project site fronting Main, Mission and Spear Streets are structures typifying early construction in the area. The 3-story Schou-Gallis brick building occupying the southwest corner of the intersection of Mission and Spear Streets reflects the character of buildings constructed south of Market Street in the early part of the 20th century (Figure 18, page 43). There is currently a proposal to remove the structure and construct an 18-story office building on the site, the 101 Mission Street Office Building (EE 79.236).

The 5-story Folger Coffee Company Building at the southwest corner of the intersection of Spear and Howard Streets was renovated during the early 1970s and is currently used as office space (Figure 19, page 44). Renovation of this brick building established an architectural style that was partially reflected in the design and use of brick in the Borel building constructed to the north of the intersection (Figure 19, page 44).

Building colors range from red in the use of brick to brick that is painted yellow, and the tan and grey of concrete panels on building exteriors constructed near the project site since 1970. The dark grey, plain glass of the 18-story Veterans Administration Building located at Howard and

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[1]Other structures on the block designed by architects for the proposed project, Jorge De Quesada, Inc., include the Borel building, the Howard and Main Street office building adjacent the project site, the 150 Spear Street office building and 101 Mission Street office building (currently being designed), EE 79.236.

View north along Main Street. Cross street is Mission Street.

View of building on southwest corner of Mission and Spear Street intersection.

Project Area Photographs

Source: EIP Corporation

Figure No. 18

Folger Coffee Company Building on southwest corner of Howard and Spear Street intersection.

View of Borel Building (right) and Howard and Main Street Office Building.

Project Area Photographs

Source: EIP Corporation

Figure No. 19

Main Streets contrasts with the brick ornamentation and arched windows and entries of the adjacent Folger Coffee Company building. The mix of building styles, colors and contrast in building heights between old and new buildings in the area provide a varied design theme that is not unified. However, the bulk of new highrise structures relates to previously constructed highrise buildings in the project area.

At ground level near the project site, views to the north encompass highrise structures in the south of Market Street area that block views toward the skyline profile of buildings of the Financial District (Figure 18, page 43). Views to the west are largely confined due to elevated freeway ramps; the 30-story Pacific Gateway Building is currently under construction adjacent to the freeway ramps. Views south along Main Street are largely confined due to the Howard and Main Street building adjacent to the project site, the Veterans Administration Building and elevated freeway ramps. The visual impression in the area is one of an increasingly urbanized environment where low-profile buildings of earlier design trends with light industrial land uses are giving way to taller structures devoted to office use with variation in design style and use of exterior surfacing materials.

F. SOILS AND SEISMICITY

1. Soils

The project area is underlain by about a 20-foot thickness of artificial fill containing bricks, wood and other rubble.[1] Fill was progressively placed in the project area between 1852 and about 1914.[2] The fill is underlain by

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[1]Lee and Praszker, "Geotechnical Input for EIR on 101 Mission Street, San Francisco," July 1980.

[2]Ibid.

soft Upper Bay mud, Lower Bay mud with interbedded sand and gravel, alluvium and Franciscan Bedrock.

The lowest extent of Upper Bay mud in the vicinity of the project site is on the order of 80 to 100 feet below the ground surface; the depth to bedrock is approximately 200 feet.[1] The soft, compressible Upper Bay mud is thought to be thinner under the proposed Spear and Main project site; sand layers are anticipated to be thicker under the site than in the general area.[2]

Groundwater in nearby areas is found approximately 8 to 10 feet below the ground surface.[3] The soft Bay mud and the lower portion of the fill are thus saturated with water.

2. Seismicity

No known active faults cross the project site. However, strong ground motion could result from movement along the San Andreas, Hayward or Calaveras Faults. The San Andreas Fault zone is located approximately 9 miles southwest of the site; the Hayward and Calaveras Fault zones are approximately 15 and 30 miles to the east, respectively.

G. HISTORICAL RESOURCES

A principal structure of architectural and historical significance in the immediate area of the project site is the Rincon Annex Post Office on the southeast corner of Mission and Spear Streets. Constructed in 1939 with Gilbert Stanley Underwood as consulting architect and Louis A. Simon as supervising architect, the Post Office has been placed on the

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[1]Lee and Praszker, "Geotechnical Input for EIR on 101 Mission Street, San Francisco," July 1980.

[2]Richard Rogers of Lee and Praszker, Consulting Civil Engineers, telephone communication, 20 October 1980.

[3]Lee and Praszker, op. cit.

National Register of Historic Places, and is on the San Francisco listing of Architecturally and/or Historically Important Buildings.[1] The structure has been given a Department of City Planning (DCP) rating of 4.[2]

In addition, within about a 2-block radius of the project site, 3 other buildings are on the San Francisco list of Architecturally and/or Historically Important Buildings. These buildings include the Southern Pacific Towers along Spear Street from Market to Mission Streets (DCP rating of 4), the Southern Pacific Building at 1 Market Street (Heritage rating of A, DCP rating of 4), the Pacific National Life Building at 215 Market Street (Heritage rating of A, DCP rating of 4), and the PG&E Building at 245 Market Street (Heritage rating of A, DCP rating of 4). Other buildings in the area not on the list but included in the DCP survey are

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[1]Adopted by the City Planning Commission, Resolution No. 8600, 29 May 1980.

Section 1011 of the City Planning Code directs that structures recognized by state or federal historic agencies are to be included on a listing of Architecturally and/or Historically Important Buildings.

[2]Heritage Survey refers to a survey of downtown buildings located along Market Street and in the dowtown financial and retail districts conducted by the Foundation for San Francisco's Architectural Heritage. Buildings constructed after 1945 were not rated. An 'A' rating indicates the most important individual buildings, distinguished by outstanding qualities of architecture, historic and cultural value and relationship to environment. A 'B' rating indicates buildings which are individually important for their overall quality rather than for particular, outstanding characteristics.

DCP Survey refers to an architectural survey of all buildings in the City conducted by the Department of City Planning between 1974 and 1976. Those buildings considered to have architectural value were rated as to the degree of architectural value from a low of "0" to a high of "5". Factors considered included architectural significance, urban design context and overall environmental significance. In the estimation of the inventory participants, buildings rated "3" or better represent approximately the best 2% of the City's architecture.

the 72 Spear Street Building (DCP rating of 1), the Folger Building at the southwest corner of Spear and Howard Streets (DCP rating of 2), the 101 Mission Building (DCP rating of 1), the 115 Main Street Building (DCP rating of 1), the 101 Market Street Building (DCP rating of 2), and the 100 Mission Street Building (DCP rating of 1).

Buildings on the project block with frontages on Mission Street and the portions of Spear and Main Streets toward Mission Street are structures dating from around 1900 to the 1920s. They are constructed with brick and concrete, and are generally of simple architectural expression. Two buildings that appear to date from before the 1906 earthquake and fire are the former stables at 115 Main Street and the adjacent building at the corner of Main and Mission Streets (Figure 18, page 43). Both are 2-story brick structures and express their different use in the way the structures were designed. The stables retains its second-floor hay doors and wooden hoist; the ground floor has double wooden entrance doors in addition to single ones. The facade has a stepped, brick parapet, or false front, with a brick cornice[1] molding. The corner building at Mission and Main Streets has 2 bays on Mission Street and 18 bays on Main Street. The building has a brick cornice and 2 types of brick window openings on the first and second floors. Both buildings are typical in architectural style for their period of construction. The other building that would be a neighbor of the proposed project is located adjacent to the proposed 150 Spear Street Office Building. This structure is a 4-story brick building with a pressed metal cornice and iron balconies on the upper floors that are connected to fire escapes. The ground floor, somewhat altered, houses the Spear Street restaurant.

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[1]Cornice: the projecting horizontal member along the top of a roof line.

Of the buildings that formerly occupied the site, 2 were built in 1907, one in 1913-1914 and one in 1938, according to San Francisco Department of Building Records. It is assumed the structures were principally used for warehousing and offices.

H. COMMUNITY SERVICES

1. Police

The proposed project site is subject to routine police patrol by a two-man squad car along both Main and Spear Streets. The area is under the jurisdiction of Southern Station at 850 Bryant Street.

Between 1 January 1980 and 30 June 1980, 87 reported thefts were committed in the project area, of which 46 were grand thefts. The majority of known crimes committed were concerned with stolen automobiles and automobile stripping.[1]

2. Fire

The nearest fire alarm box to the proposed project is Box 2116 at the intersection of Main and Mission Streets. Three stations of the San Francisco Fire Department are able to respond to calls from this box:

- Station 35, at 676 Howard Street (3-minute response time)
- Station 13, at 530 Sansome Street (3-minute response time)
- Station 1, at 416 Jessie Street (3-minute response time)

The response times from these stations to the proposed project site are average times and would vary depending on the time of day, traffic conditions, weather, and other

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[1]Paul Libert, Officer, Planning and Research, San Francisco Police Department, personal communication, 3 November 1980.

factors affecting travel on the streets. High and low-pressure fire hydrants are located at Mission/Spear Streets and Mission/Main Streets.[1]

3. Water

Water for San Francisco is provided from the Hetch Hetchy project and the San Francisco Water Department system via the Crystal Springs and San Andreas reservoirs. The 140-million gallon capacity reservoir at University Mound (northeast of John McLaren Park) serves the project area as well as the Marina and the downtown and industrial areas of San Francisco.

Eight and a 12-inch low-pressure water mains are located under Mission Street, a 6-inch main exists under Main and Howard Streets and there is an 8-inch line under Spear Street. A 20-inch water transmission line located beneath Main Street between Folsom and Market Streets also supplies the project area.[2]

4. Sewer

A 12-inch sewer line is located under Spear Street which will be replaced with a line of various widths (12, 15 and 18 inches), and a 4 x 6-foot sewer is located under Main Street between Mission and Howard Streets.[3] The new main will be constructed as soon as a contractor is selected. The facilities carry wastewater flow to the Northpoint Water Pollution Control Plant which has a general maximum capacity of 135 million

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[1]Eugene Calamorini, Captain, Planning and Research, San Francisco Fire Department, personal communication, 3 November 1980.

[2]San Francisco Water Department, Gate Book, map, main locations showing existing facilities; verified by telephone by George Nakagaki, Assistant Manager, San Francisco Water Department City Distribution Division, 3 November 1980.

[3]Nat Lee, Engineering Associate, Bureau of Sanitary Engineering, Department of Public Works, personal communication, 3 November 1980, 10 February 1981 and 29 June 1981.

gallons per day (mgd), and an emergency capacity of 150 mgd. Average dry weather weekday flow to the plant is between 56 and 62 mgd.[1]

5. Solid Waste

The Golden Gate Disposal Company serves the project area. Solid waste removal takes place as often as necessary or requested and is brought to a transfer station west of Candlestick Park before its final destination at the Mountain View dump. This dump has a 2½ year capacity after which time, San Francisco's solid waste would go to dumping sites in Vacaville and Altamont.

I. ENERGY

The project area is supplied with electricity and natural gas by Pacific Gas & Electric Company (PG&E). The site does not contain a building and energy is not consumed on the site.

J. ECONOMIC AND FISCAL

At present, no commercial activity exists on the site and no employment is available (see Chapter II.A., Land Use, page 17).

The 1980-1981 assessed value of the proposed project site was approximately $506,000 ($501,000 in land, $5,000 in surface paving improvements). At the 1980-1981 composite tax rate of $4.97 per $100 assessed value, the site generated about $25,200 during the fiscal year.[2] This is distributed

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[1]Michael McDevitt, Assistant Manager, Northpoint Water Pollution Control Plant, Department of Public Works, telephone conversation, 29 June 1981.

[2]Of the total tax, about $20,300 represents the maximum allowable under Proposition 13 per general government expenditures ($4.00 per $100 assessed valuation), and $4,900 was levied to finance bond obligations previously approved by the general electorate ($0.97 per $100 assessed valuation).

to the City and County of San Francisco (84.8%, about $21,300); the San Francisco Unified School and Community College District (8%, about $2,000); BART (7%, about $1,800 for bond payments only); and the Bay Area Pollution Control District (0.2%, about $50).

The City and County of San Francisco currently incurs some cost to provide services to the site such as fire and police protection, street lighting and cleaning, and street and storm maintenance.

Employment and Housing[1]

In examining the distribution of income among employees in San Francisco's downtown highrises (Table 5a, page 52a), the majority of clerical workers fall into the income categories of $17,800 annually or lower, and most of the managers, proprietors, and professional and technical workers are in the income categories of $17,800 annually or higher.

Table 5b, page 52b, provides an indication of the range of prices for different types of housing in the City, both

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[1]Environmental Impact Planning Corporation, "Estimating Employee/Housing Impacts for Downtown San Francisco Highrise Office Buildings," October 1981. A copy of this information is available at the Office of Environmental Review.

● TABLE 5a

Income Ranges for Office Workers
in Downtown High-Rises 1981

Occupational Distribution	Individual Income Distribution (salaries and wages)[1] Under 14,240	14,240 17,799	17,800 26,699	26,700 35,599	35,600 44,499	44,500 88,999	89,000+	
Professional and Technical	6%	11%	34%	51%	50%	37%	42%	
Manager and Proprietors	1	4	14	23	40	49	50	
Clerical	92	81	44	14	4	4	1	
Sales	1	2	5	10	5	7	4	
Others	--	2	3	2	1	3	3	
TOTAL	100%	100%	100%	100%	100%	100%	100%	
% of Individuals in Range[2]	18.6%	16.5%	22.4%	19.1%	10.4%	10.7%	2.4%	100%
% of Households in Range	15.1%	8.9%	15.2%	20.3%	16.8%	20.3%	3.3%	TOTAL 100%

Source: EIP; San Francisco Planning and Urban Renewal Association, Impact of Intensive High-Rise Office Development-Detailed Findings, Table 21, page 117 (1975).

[1]The income data are based on raw data from a survey of 1,022 office workers in San Francisco high rise buildings conducted in April 1974 for the SPUR Study. In 1981 income ranges were developed by inflating the 1974 ranges by 78%. This represents the mid-point of the range of increases for office related occupations as given in U.S. Department of Labor, Area Wage Survey: San Francisco-Oakland SMSA, Washington, D.C., March 1981, page 12.

[2]The survey asked each respondent to indicate his/her income as well as household income.

● TABLE 5b
HOUSING PRICES IN SAN FRANCISCO, 1981

Rentals: Median Monthly Rent[1]	
Studio Apartment	$ 440
1-Bedroom	500
2-Bedroom	560
3+ Bedrooms	590
1980 Census Median Monthly Rent (median number of rooms is 4.0)[2]	310
Purchase: Average Sales Price	
New Single Family[3]	$ 155,500
Existing Single Family[4]	148,000
Condominium (New and Existing)[5]	112,760
Median value of owner occupied dwelling (median number of rooms of rooms is 4.0)[6]	119,900

[1]Mike Estrada, Department of City Planning, telephone conversation, 17 December 1981. Result of 1981 survey of rental advertisements in the San Francisco Examiner. Newspapers are not statistically valid sources because they are not representative of entire stocks of units, they can, however, provide a general indication of rents.

Two other sources of rental data exist but have been deemed inadequate for the present study: 1) HUD develops rental costs for the Section 8 housing subsidy program. These estimates reflect SMSA data which have been indexed forward from the 1970 census, and benchmarked with the Annual Housing Survey, which is published with at least a year time-lag; 2) the Citizens' Housing Task Force has developed hypothetical rental levels based on multi-family construction cost. However, new units represent a very small segment of the San Francisco rental market.

[2]Based on preliminary date from the 1980 census (100% sample) of $266 in April 1980. Selected Housing Characteristics by States and Counties: 1980, Bureau of Census 1981. The median rent was indexed to 1982 based on the Consumer Price Index of 15.4%.

[3]New single family housing price given in: Department of City Planning Housing Element, Background Data and Need Analysis, revised September 1981, page 3, were indexed from October 1979 to October 1981 according to: Real Estate Research Council of Northern California, Real Estate Report, vol. 33, no. 1, page 8; 1981 index given by James H. Davis, Executive Director, telephone conversation, 17 December 1981.

[4]Real Estate Research Council of Northern California, op. cit., page 4.

[5]Based on average loan amount over the first 3 quarters of 1981, as reported in: California Department of Savings and Loan, "Loan Summary Analysis," line 26. Assumes a 20% down payment.

[6]Based on 1980 Census of $103,900 for median owner-occupied housing price indexed to $119,000 for 1982 based on the Consumer Price Index of 15.4%.

● TABLE 5c

PERCENT OF OFFICE WORKER HOUSEHOLDS ABLE TO AFFORD VARIOUS MONTHLY HOUSING COSTS, 1981

Housing Type	Median Monthly Cost	% Able to[2] Afford Cost
(Rental)		
Studio Apartment	$ 440	75-77
One Bedroom	500	70-73
Two Bedroom	560	66-69
Three or More Bedrooms	590	66-69
(Purchase)		
New Single Family	1,570	13-16
Existing Single Family	1,497	16-18
Condominium	1,140	22-24

[1]Housing costs derived from Table 5b; rental costs as given, monthly housing expenditure for purchase assumes 20% down payment, 15% mortgage interest, 30-year mortgage.

[2]Interpolated from Tables 5a and 5b.

rental and purchase units in 1981. The estimated vacancy rate for the total number of units in the City is 5.6.[1]

Housing in San Francisco is generally purchased by household rather than individuals (although 1-person households still exist in the City). Table 5c, page 52c, provides an estimate of the percentages of the expected employee population of new highrise office buildings which could afford a given housing type. This table assumes that for home purchases, the households would make a 20% down payment, and had a 15% interest rate of a 30-year mortgage term. Table 5c does not reflect availability of housing, just affordability.

The expansion of downtown office space provides one of the main sources of pressure on San Francisco's housing demand. Regional housing impacts are also experienced. A discussion of regional and San Francisco housing characteristics is included in the Five Fremont Center, Final EIR EE 80.268, certified on 12 March 1981, pages 41 and 42 and is hereby incorporated by reference into this EIR.

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[1]Department of City Planning, "The Housing Element, I. Background Data and Needs Analysis", December 1980, revised September 1981, page 3. The 5.6% vacancy rate is reported by the Bureau of the Census and is currently used by the City Planning Department although Planning Director Dean Macris has requested that the Bureau revise its estimate since other indicators suggest the vacancy rate should be lower. (Joan Carson, Planner, San Francisco Planning Department, telephone conversation, 29 December 1981. The methodology employed by the Bureau of the Census included all housing - single family units, apartments, etc. - which tended to skew the rate for apartments. In addition, the inquiry techniques by the Bureau regarding occupancy could have overinflated the vacancy rate.) A new Census estimate is anticipated by February 1982. Data on idle meter counts reported by the Citizens' Housing Task Force (The Report of the Citizens Housing Task Force, San Francisco, July 1981, pages 44-47) and the results of a postal survey sponsored by the Federal Home Loan Bank Board (Real Estate Research Council of Northern California 1981 Mid-Year Real Estate Report. September 1981, Vol. 33/No. 2, page 40) indicate that the overall vacancy rate may lie between 1.4% and 0.8% for 1980.

The limited information available on housing production in the Bay Area counties suggests that the markets have been depressed in recent years. Regionally, single family permits, as shown in Table 5d, page 52f, declined in 1979 and 1980. Alameda, Contra Costa, San Francisco, San Mateo and Sonoma county permits issuances rose from 1978 to 1979, but then also declined in 1980. A similar pattern is exhibited in Table 5e, page 52g, for multi-family permits, with the exception that condominium permits increased steadily through 1980. Rental permits in Napa and Santa Clara counties also rose in 1980.

● TABLE 5d

SINGLE FAMILY PERMITS ISSUED
BY COUNTY FOR SELECTED YEARS

	1976	1977	1978	1979	1980
Alameda	2,971	3,453	4,052	4,129	2,743
Contra Costa	6,122	9,059	5,193	5,557	4,566
Marin	857	894	1,154	694	751
Napa	546	658	627	337	320
San Francisco	312	369	227	239	190
San Mateo	1,813	2,193	1,185	1,685	1,201
Santa Clara	9,318	8,446	6,999	6,098	5,071
Solano	3,032	4,707	3,483	2,773	1,724
Sonoma	3,163	3,627	2,456	3,069	1,779
Region Total	28,134	33,406	25,376	24,581	18,345

Source: ABAG San Francisco Bay Area Housing Activity Report No. 3, May 1981, pages 20-24.

● TABLE 5e

MULTI-FAMILY PERMITS ISSUED
BY COUNTY FOR SELECTED YEARS

	1976		1977		1978		1979		1980	
	Rentals	Condos	Rentals	Condos	Rentals	Condos	Rentals	Condos	Rentals	Condos
Alameda	803	102	1,237	20	1,985	480	1,496	718	1,038	1,022
Contra Costa	1,026	0	1,325	20	1,415	0	387	614	240	
Marin	232	156	336	227	679	118	151	25	92	87
Napa	170	82	306	108	248	73	35	0	110	0
San Francisco	1,310	0	1,167	0	1,818	0	1,394	200	549	463
San Mateo	820	252	1,449	197	1,130	343	697	185	424	682
Santa Clara	3,695	138	4,104	377	2,807	214	1,382	556	2,627	327
Solano	142	0	652	59	701	137	684	61	490	64
Sonoma	601	0	1,168	77	948	0	890	109	280	303
Region Total	8,799	730	11,744	1,085	11,731	1,365	7,116	2,242	6,224	3,188

Source: ABAG, San Francisco Bay Area Housing Activity Report, No.. 3, May 1981, pages 20-24.

CHAPTER III

IMPACTS[1]

A. LAND USE

The proposed project would add 271,600 net rentable square feet of office space, 7,460 net rentable square feet of retail space and an 18,700 square feet basement parking area, capable of accommodating 36 cars. Specific major tenants are not known at this time (see Chapter I, Project Description, page 1).

The proposed project would be part of a trend of increasing intensification of office development in the South of Market area. Cumulatively, this may create secondary impacts in the form of further development of support retail shopping and service-related establishments to serve the increased employee population. It may also create "spillover" effects such as increased land demand in the South of Market area, employment displacement and increased housing demand.

The project would also contribute on an incremental, but cumulative, basis to economic, fiscal, air quality, housing demand, transportation and visual impacts occurring as a result of general downtown development within San Francisco. (See Chapter III, B. Transportation, page 55; E. Visual Quality and Urban Design, page 77; J. Economics, page 96). From a planning perspective, concern for the nature and extent of these cumulative impacts has raised questions of the appropriate level of growth in the C-3 district, land use preferences and planning controls and criteria for such development.

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[1]Since preparation of the Preliminary Draft EIR, the gross floor area of the proposed project has been adjusted downward by 3%, and net rentable area has been adjusted downward by 2.5%. Therefore, impacts shown are worst case conditions. None of these changes have required changes in the calculation of transportation impacts because they fall within the ± 10% level of statistical validity of the methods used to predict the impacts.

However, the objectives and policies of the Commerce and Industry Element of the City and County of San Francisco Comprehensive Plan and the discretionary review criteria described in Chapter I.D., Zoning and Required Approvals, (page 17), provide a policy framework against which the project may be evaluated.

Downtown Office Objective 6 of the Element states:

"Maintain and improve San Francisco's position as a prime location for financial, administrative, corporate, and professional activity."[1]

Five Policies are contained under Objective 6.

Policy 1: "Encourage continued growth of prime downtown office activities so long as the undesirable consequences of such growth can be avoided."[2]

As noted in the Element,". . . assuming that (environmental and aesthetic) costs are controlled within publicly acceptable limits, the City should encourage continued office growth."[3] Accordingly, the proposed project should be measured against any adverse impacts it would cause in determining what would be "publicly acceptable" (see Chapter V., Unavoidable Adverse Impacts, page 115).

Policy 2: "Guide location of office development to maintain a compact downtown core so as to minimize displacement of other viable uses."[4]

The project would occur within the downtown area, assisting to maintain a compact form of downtown development.

[1]Department of City Planning, Commerce and Industry Element, Policies and Objectives, 1978, page 24.

[2]Ibid.

[3]Ibid. page 25.

[4]Ibid.

The project would displace open-air parking to other locations (see Chapter III.B., Transportation). No buildings would be removed because of the project.

Policy 3: "Assure that downtown development is compatible with the design and character of San Francisco."[1]

The visual impact of the proposed project is noted in Chapter III.E., page 77, of this report.

Policy 4: "Provide adequate amenities for those who live, work and use downtown."[2]

A landscaped open air pedestrian plaza, a restaurant and retail space is proposed in the project for use principally by its occupants.

Policy 5: "Control traffic and congestion in the downtown area, particularly from private automobiles.[3]

Traffic impacts associated with the proposed project are detailed in Chapter III.B., below.

B. TRANSPORTATION

1. Project and Cumulative Trip Generation/Distribution

The City's transportation impact analysis guidelines[4] explicitly recommend trip generation and modal split factors. The guidelines suggest that a total of 17.5 daily person trips would be generated per 1,000 square feet of leasable area in an office project. In addition, based upon research conducted by the California Department of Transportation (CalTrans), it is estimated that the project's retail shops would generate approximately 100 person trips daily per

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[1]Department of City Planning, Commerce and Industry Element, Policies and Objectives, 1978, page 26.

[2]Ibid., page 27.

[3]Ibid.

[4]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, June 1980, revised October 1980.

1,000 square feet of net retail area.[1] It is also estimated that about 25% of these retail-generated trips would be internal to the building or adjacent buildings within the block bounded by Mission, Spear, Howard and Main Streets.[2] The proposed project would therefore generate a total of 5,000 daily person trips (excluding trips to/from the shops which would be internal to the immediate project area) of which approximately 2,700 would be work trips and 2,300 would be non-work trips. Approximately 1,000 of the daily trips would occur during the evening peak hour.

In comparison with the foregoing figures, the City projection[3] of cumulative travel for other downtown projects approved through October 1980 is approximately 25,500 peak hour person trips. In addition, a preliminary review of projects approved from November 1980 through October 1981 indicated about 7,800 additional person trips. The project would amount to about 3% of the cumulative peak hour trip generation of these projects. This approved cumulative development represents about 8.8 million square feet of new office construction.

Based upon the suggested modal split contained in the City guidelines,[4] the apportionment of project trip generation has been calculated and compared to the cumulative trip generation of other development. The various trip totals are outlined in Table 6, page 58.

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[1]San Francisco Department of City Planning, Final Environmental Impact Report, 315 Howard Office Building, (EE 79.196) certified 21 August 1980. Specific types of retail activities for the project have not been defined.

[2]Estimate by George W. Nickelson, Traffic Engineer for EIP Corporation.

[3]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, June 1980, revised October 1980.

[4]Ibid.

In addition to the projects approved (through October 1981) in the downtown, a number of other developments have been proposed. Based upon a report prepared by the Department of City Planning,[1] about 9.3 million square feet of downtown office development has been proposed through October 1981 but not yet approved. If approved, these projects would double the cumulative downtown growth. A total of 32,500 p.m. peak hour person trips would be added to the 33,000 new trips generated by approved development. The project would add 1,000 trips for a total peak hour generation of 66,500 new person trips. The potential impacts of this growth are generally discussed in the summary at the conclusion of this section.

2. Impacts on the Street System

In establishing the base traffic conditions without the project, it must be recognized that traffic increases will result from projects approved but not yet completed. Projections by the City Planning Department[2] indicate that p.m. peak hour travel on Muni's downtown lines will increase by about 30%. Based on these

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[1]Memorandum from Dean Macris, Planning Director to Planning Commission entitled "Alternative Interim Controls on Downtown Development," 18 November 1981.

[2]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, June 1980, revised October 1980.

projections, the total peak hour auto travel in the downtown area could also increase by approximately 30-35%, or a total of 12,000 new p.m. peak hour auto trips as a result of the approved development[1] (see Table 6, page 58). An increase of this magnitude would affect traffic flow. The proposed project would generate 360 p.m. peak hour auto trips, which would be approximately 3-4% of the volumes generated by projects approved but not yet completed in the downtown area. If these increases are applied to the existing peak hour volumes obtained for the Mission/Spear, Mission/Main, Mission/Beale and Main/Howard intersections, the following service levels would result:

	Existing Service Level	Peak Hour Service Level in 1983 without Spear and Main Street Project	With Spear and Main Street Project
Mission/Spear (PM Peak Hour)	A	A	A
Mission/Main (AM Peak Hour)	B	D/E	D/E
Mission/Beale (PM Peak Hour)	C	E	E/F
Main/Howard (PM Peak Hour)	A	B/C	C

With the addition of office development proposed, but not approved, through October 1981, the intersections of Mission/Main and Mission/Beale would degrade to service level F, while Main/Howard would degrade to service level D. The Mission/Spear intersection would remain at service level A.

In addition to a degradation in the quality of traffic flow on surface streets as a result of the cumulative development, the freeways and freeway ramps would be critical links in the overall network. With the freeways currently

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[1]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, June 1980, revised October 1980.

operating under congested conditions during peak hours, the traffic increases generated by cumulative downtown development would add to this congestion, with the likely result that travel delays would be extended. Traffic delays would probably increase in proportion to the increased trip generation of the downtown area. The 30-35% increase in trip generation attributed to approved downtown development would therefore add 30-35% to peak hour delays. As further development occurs, the peak hour traffic flows could be extended over a 2-3 hour period.

A further concern is related to the potential demolition of The Embarcadero Freeway. Although no specific projections are available, the removal of this freeway

● TABLE 6

PROJECT AND CUMULATIVE TRIP GENERATION DURING PM PEAK HOUR

Mode and Distribution	Project	Other Development[1]	Total
Auto			
North Bay	40	2,275	2,315
Peninsula	58	2,769	2,827
East Bay	86	3,448	3,534
San Francisco	176	3,518	3,694
Total Auto	360	12,010	12,370
MUNI	290	9,470	9,760
BART			
East Bay	90	2,507	2,597
Daly City	60	2,223	2,283
AC	85	2,530	2,615
SamTrans	15	450	465
Sourthern Pacific R.R.	45	1,330	1,375
GGT	45	1,440	1,485
Ferry	15	400	415
Other	30	670	700
Totals	1,035[2]	33,030	34,065

[1] "Other development" includes downtown projects approved through October, 1981, but not yet built.

[2] This number exceeds the 1,000 person trip projections because intermodal transfers are included.

would divert traffic to surface streets and could focus further traffic on the Mission/Main and Mission/Beale freeway ramps.[1] The demolition project is considered to be among the City's highest priorities, but the final decision depends upon the findings of an environmental review of the project. The federal government has allocated $0.5 million for the environmental review of the demolition and $83 million once earmarked for the Interstate 280 connection to the Embarcadero Freeway has been transferred to other projects.[2] Environmental review for demolition of The Embarcadero Freeway is expected to begin by mid-1982. No schedule has been adopted for demolition of the freeway.

3. Transit Impacts

Muni. The 1983 patronage characteristics and load factors for the various downtown MUNI lines are outlined in Table 7, page 60. These statistics already reflect the growth in patronage due to other downtown development. The additional peak hour patronage due to the proposed project was added to the 1983 patronage due to the proposed project was added to the 1983 patronage projections on a proportional basis. As indicated in Table 7, the project itself would have minimal impacts on the 1983 load factors. However, cumulative development would increase patronage by about 30% and 21 of the 34 lines with ridership data would experience load factors greater than 1.00.[3] Another 6-8 lines are within one commute bus run of reaching capacity. Buses and Muni-Metro vehicles would be crowded during the entire peak hour and passengers would experience uncomfortable conditions.

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[1]Northeast Waterfront Survey, ROMA-Architects and Planners, 1979.

[2]Chi-Hsin Shao, Department of City Planning, Transportation Section, telephone conversation, 17 April 1981.

[3]A load factor of 1.00 reflects a ridership of 150% of available vehicle seating. With a load factor of 1.00, a 40 seat bus would have all seats filled plus 20 standees in the aisle. However, the LRVs on Muni Metro lines are designed for a seated capacity of 68 and a maximum passenger load of about 150; at a load factor of 1.00, about 80 people would be standing (from Muni 5-Year Plan, 1979-84, page 20).

● TABLE 7

SUMMARY OF EXISTING MUNI PATRONAGE, 1983
P.M. PEAK HOUR-OUTBOUND DIRECTION

	1983 PATRONAGE				LOAD FACTORS[1]		
LINE	EXISTING PATRONAGE	1983 WITHOUT *PROJECT**	1983 WITH PROJECT	CAPACITY	EXISTING PATRONAGE	1983 WITHOUT PROJECT	1983 WITH PROJECT
1	400	499	504	450	0.89	1.11	1.12
1X	613	766	744	750	0.82	1.02	1.03
2	572	716	723	600	0.95	1.19	1.21
3	511	638	644	525	0.97	1.21	1.23
4	235	294	297	375	0.63	0.79	0.79
5	986	1,233	1,245	1,275	0.77	0.97	0.98
6	500	627	633	675	0.74	0.92	0.94
7	327	410	414	450	0.73	0.91	0.92
8	658	823	831	1,125	0.59	0.73	0.74
9	531	633	670	750	0.71	0.88	0.89
11	676	844	852	750	0.90	1.13	1.14
12	487	609	615	525	0.93	1.16	1.17
14	1,215	1,521	1,536	1,275	0.95	1.19	1.20
14GL	253	317	320	300	0.84	1.06	1.07
14X	655	819	827	675	0.97	1.21	1.23
15	887	1,108	1,119	975	0.91	1.14	1.15
21	660	827	835	825	0.83	1.00	1.01
27	158	196	198	300	0.53	0.65	0.66
31	498	626	632	525	0.95	1.19	1.20
31X	569	713	720	675	0.84	1.06	1.07
32	416	520	525	1,050	0.40	0.50	0.50
38	989	1,236	1,248	1,125	0.88	1.10	1.11
38L	656	819	827	675	0.97	1.21	1.23
38AX	503	631	637	600	0.84	1.05	1.06
38BX	194	242	244	300	0.65	0.81	0.81
40X	321	403	407	525	0.61	0.77	0.78
41	NO STATISTICS AVAILABLE						
42	230	289	292	300	0.77	0.96	0.97
55	1,456	1,821	1,839	1,650	0.88	1.10	1.11
61	NO STATISTICS AVAILABLE						
71	379	474	479	375	1.01	1.26	1.28
72	276	346	349	300	0.92	1.15	1.16
80X	433	542	547	600	0.72	0.90	0.91
J	798	998	1,008	1,235	0.65	0.81	0.82
K	3,119	3,901	3,940	3,900	0.80	1.00	1.01
L	NO STATISTICS AVAILABLE						
M	NO STATISTICS AVAILABLE						
N	2,050	2,565	2,590	2,400	0.85	1.07	1.08

[1]Load factor is a measure of vehicle capacity. For most Muni vehicles a load factor of 1.00 represents a designed capacity of 150% of the number of seats. For LRV's a load factor of 1.00 represents a designed capacity of 220% of the seated capacity. For example, a load factor of .85 on the N Judah line would mean that approximately 60 people would stand, 20 fewer than the maximum number of standees for which the vehicle was designed.

*Source: San Francisco Department of City Planning, Guidelines for Environmental Evaluation Transportation Impacts, June 1980, revised October 1980.

Since the listed load factors are an average during the peak hour, certain runs could experience even greater congestion than average.

The approved cumulative development would generate about 9,500 additional person trips on Muni during the p.m. peak hour. If these trips were accommodated in 45 passenger buses with load factors of 1.00 (150% of the available passenger seats), these new trips would require about 140 additional bus runs during the peak hour.

The approximate annual operating cost would be about $1.9 million (9,500 peak hour rides doubling for morning plus afternoon peak trips x 250 working days per year x $0.3886 marginal cost per peak period ride. The proposed project would add abut 3% or $58,600 to this cost. The theoretical capital costs attributable to the project and cumulative development would depend upon the number of new vehicles needed to accommodate 140 additional bus runs in the peak hour. A specific estimate would rely upon exact routing, scheduling, headways, etc. associated with the new runs.

Muni plansl (in anticipation of patronage growth) project a 10-15% increase in the system capacity by 1986. This increase would reflect added capacity in the Muni Metro light-rail service, and the replacement of existing buses with articulated coaches. This capacity increase would tend to reduce the projected load factors, but cannot be specifically quantified; benefits, however, would depend upon a more detailed improvement program with capacity increases cited for each route. Even with a 10-15% capacity increase, 14 of the 38 lines listed in Table 7 would have load factors approaching or exceeding 1.00.

Muni service could also be affected by increased vehicular and pedestrian activity. Cumulative downtown growth

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[1]San Francisco Municipal Railway 1981-86 Muni 5-Year Plan, 15 May 1982, pages 2-249 - 2-252.

would add traffic and pedestrian volumes to the various streets and crosswalks in the project area. These increased volumes would add to traffic congestion, vehicle queues, and the potential for conflicts with Muni coaches. The conflicts and congestion would be most disruptive along Mission Street. As a primary transit corridor for Muni, any inreases in traffic and pedestrian crossings could delay and disrupt Muni service. The cumulative effect of increased auto, truck and pedestrian traffic on Muni would require that future service levels of all intersections in the downtown area be calculated. The calculations would require 1) traffic, turning movement, and pedestrian counts for all streets and intersections in the downtown, 2) information on trip origins and destinations of existing development, and, 3) locations of proposed developments, and assumptions as to trip origin and destinations of proposed development. Assumptions could be made about delays Muni would experience based on this information; it wold be difficult to assign a specific time or value to the delays. Based on assumptions required, values would probably not be statistically valid.[1]

BART. The approved downtown development would increase BART ridership quality/quantity by approximately 20% (the proposed project would contribute an additional 1% to this increase). It is projected that the East Bay trains would experience average peak hour load factors of 1.4 - 1.6 and higher factors on certain peak trains.[2] BART's short-term (5-year) improvement program calls for an approximately 20% increase in capacity with added cars and some decrease in headways.[3] These

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[1]Glen Erikson, Transit Preferential Street Coordinator, Department of City Planning, telephone conversation, 5 February 1982.

[2]BART defines a load factor of 1.00 as all seats filled with no standees.

[3]Ward Belding, BART Planning Staff, telephone conversation, 23 July 1980.

improvements would allow the peak hour load factors to average 1.1 - 1.3; these factors are considered acceptable by BART staff.[1] It is recognized that further development beyond 1983 would generate patronage which would exceed the proposed capacity increase, raising load factors beyond these levels.

AC Transit. AC Transit's current peak hour service has a capacity reserve of 3,500 persons (assuming capacity equals 125% of the vehicle seats). The proposed project and cumulative development would generate about 2,600 new trips, absorbing most of this excess capacity. AC Transit staff indicate the capacity will be increased approximately 10% over the next 3-4 years, and this increase would raise the capacity reserve while preserving somewhat lower load factors on peak hour vehicles.[2] If the proposed downtown bus terminal to replace the existing Transbay Terminal is built, operating efficiency could be increased to the point where a greater number of buses per hour could be accommodated.[3]

Golden Gate Transit. With a design capacity of 8,085 peak-hour passengers (not including ferries), the effect of cumulative downtown development would be to raise patronage to about 8,100 persons. Because of financial limitations, it is likely that the District would not be able to markedly increase its capacity.[4]

SamTrans and Southern Pacific. The patronage from cumulative development would appear to exceed the available reserve capacity of SamTrans. No specific capacity improvements have been cited by the District.

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[1]Ward Belding, BART Planning Staff, telephone conversation, 23 July 1980.

[2]Gene Gardner, AC Planning staff, telephone conversation, 23 July 1980.

[3]Ibid.

[4]Peter Dyson, Golden Gate Transit, telephone conversation, 17 July 1980.

The Southern Pacific service would be improved through the addition, within 3-5 years, of approximately 1,200 seats to the southbound peak capacity.[1] With the system's existing reserve capacity of about 1,530 seats, the total capacity reserve would be about 2,730 seats. Thus, the addition of about 1,575 new peak hour passengers due to cumulative downtown development could be accommodated.[2]

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[1]Cecil Smith, CalTrans, Southern Pacific data based on telephone conversation, 27 April 1981.

[2]Ibid.

4. Parking Impacts

Based upon the trip generation characteristics of the project, the parking demand has been calculated at approximately 340 long term spaces and 145 short term spaces.[1] With 35 parking spaces proposed as a part of the project, the majority of the demand would need to be accommodated at other locations in the area. Since previous parking/inventory/occupancy surveys

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[1]Long-term parking = 2,700 daily commute trips x 25% auto 2 trips per vehicle. Short-term parking = 2,00 daily non-work trips x 50% auto 2 trips per vehicle turnover rate of 4.

in this area (see Section II.B., Setting, Transportation, page 20), indicate an occupancy rate of about 89%, little parking is currently available. The project would displace 110 spaces in an existing surface lot. This displacement would raise the occupancy rate to about 90%. The parking demand generated by the project would raise the occupancy to 92%. The occupancy would be even higher with the development of other nearby projects - the Pacific Gateway and 150 Spear Street office buildings, the 115-135 Main Street building, the Main and Mission Street building and the 101 Mission Office building (see Figure 13, page 22). In addition, cumulative approved downtown development would add to the parking demand in the downtown area,[1] (generating a demand for 18,000 spaces). The increased demand due to the project and cumulative development would effectively raise the parking occupancy to 100+% within the area surveyed. It is probable that there would be an increased parking demand south of Folsom Street and beyond to The Embarcadero. Added vehicle circulation would also result from the increased number of vehicles seeking the limited number of parking spaces, increasing street congestion.

This analysis suggests that parking facilities would be directly affected by cumulative growth. Parking impacts could relate to the inconvenience for downtown employees and visitors as they are forced to park further from their destination. A secondary effect would be the increased parking and traffic in neighborhoods which are removed from the downtown. Some motorists might seek parking (both curb and off-street) in peripheral areas and ride Muni to/from the downtown. This parking demand would remove spaces from local residences/businesses. In response to the intrusion of commuter parking into neighborhoods, preferential parking areas could be implemented (as have already been implemented in the North Beach and Telegraph Hill

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[1]The list of cumulative projects would amount to about 9 million square feet of office area. Based upon the City Planning Code, this area would generate a demand for about 18,000 parking spaces.

areas). The costs of administering these programs (and the costs of purchasing parking permits by residents) would be impacts associated with cumulative development. It is also possible that parking inconvenience could cause some commuters and/or visitors to shift to an alternate transportation mode. Some persons might elect to join carpools/vanpools or might use public transit.

The project's provision of long-term tenant parking would not be responsive to the plan-designated intent to provide short-term parking in the area, as outlined in the Transportation Element of the City's Comprehensive Plan.

The proposed project's truck loading needs have been calculated on the basis of downtown development guidelines.[1] These guidelines recommend 0.1 space per 10,000 gross square feet of office area. The proposed project's truck loading needs have been calculated as follows:

- 306,400 sq. ft. (total project) @ 0.1/10,000 = 3.1 spaces

These calculations indicate a need for 3 off-street truck loading spaces. The proposed project's 2 large truck docks and 3 delivery van spaces in the basement would meet this requirement.

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[1]San Francisco Department of City Planning, Guiding Downtown Development, May 1981, page D-8.

Project parking would be provided in the basement, generally arranged adjacent the interior walls of the basement surrounding the building's centrally located mechanical cove and stairs (Figure 9, page 13).

5. Pedestrian Impacts

Since all the proposed project's trips would involve at least some walking, pedestrian trips would be added to the sidewalks and crosswalks adjacent to the project site. Based upon travel research conducted by the California Department of Transportation,[1] it is estimated that approximately 30% of the 5,000 daily trips would occur in the 4:00 p.m. - 6:00 p.m. period and 20% in the 11:30 a.m. - 1:30 p.m. period. Thus, 1,000 midday pedestrian trips and 1,500 p.m. peak period pedestrian trips would be added to the existing pedestrian flows; the total projected flows are depicted in Figure 20, page 65. Based upon these projections, the quality of peak period pedestrian flow would degrade slightly so that impeded flows would be experienced along Main Street (north of the site). The cumulative pedestrian impacts along Main Street would reflect the increased pedestrian flows and vehicle conflicts resulting from the project and other proposed development in the immediate vicinity. Based upon a cumulative impact assessment conducted for the proposed 135 Main project,[2] the p.m. peak hour flow along the east side of Main Street would be 3.0 persons/minute/foot of sidewalk width. With a 12 foot sidewalk width, this rate equates to about 2,160 pedestrians during the peak hour. The pedestrian flow would remain within the "impeded" category. In addition, pedestrian

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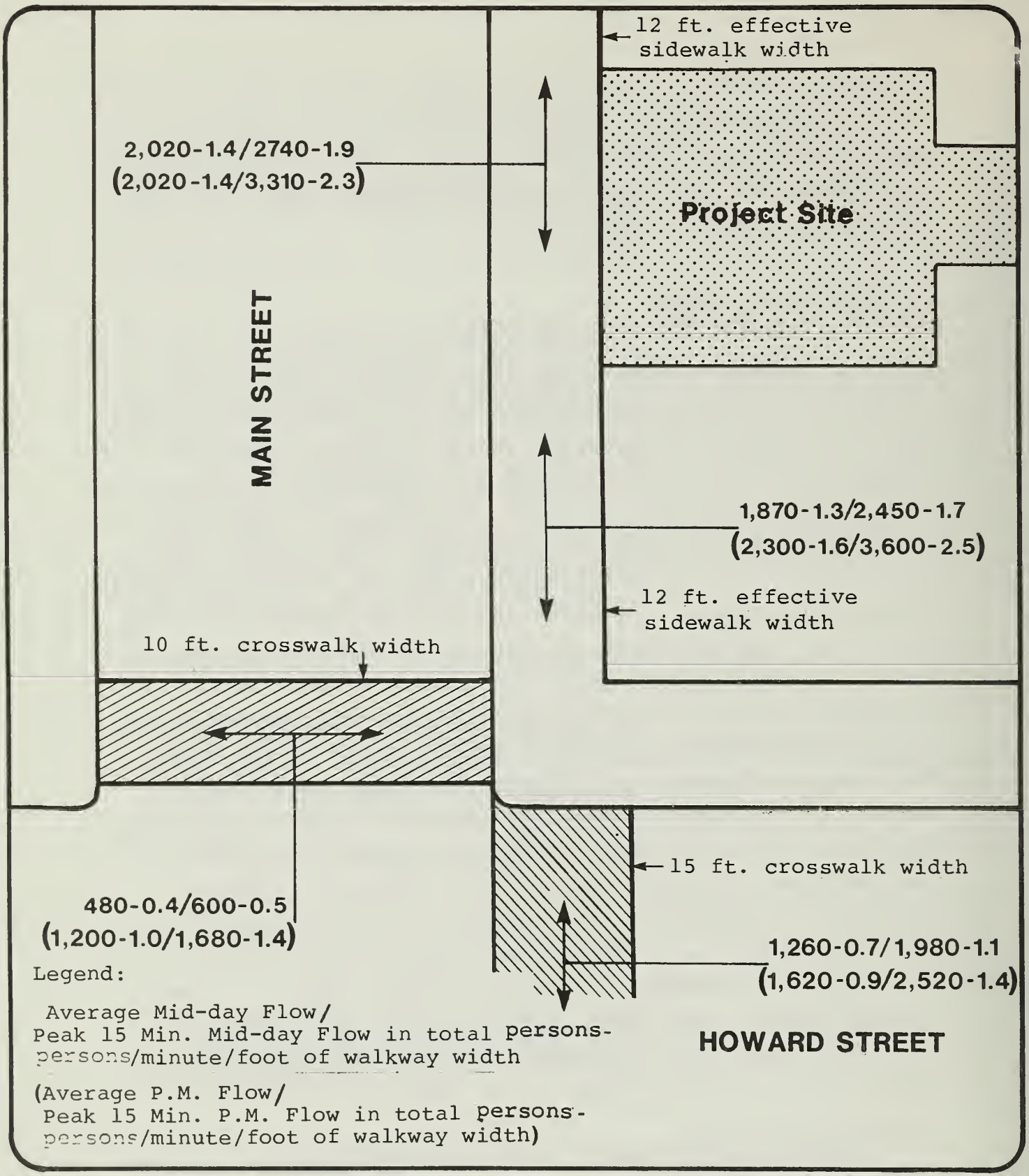
[1]Tenth Progress report on Trip Ends Generation, CalTrans District 4, 1975.

[2]John Flynn, Environmental Planner, Environmental Science Associates, telephone, September 25, 1981.



Pedestrian Conditions with Proposed Project

North
Not to Scale

Note: Mid-day is 11:30 A.M. - 1:30 P.M.
Peak P.M. is 4:00 P.M. - 6:00 P.M.

Source: EIP Corp.

Figure No. 20

crossings of Main Street would be aided by sidewalk widening and signal modifications at the Mission/Main Street intersection.[1] These modifications would allow pedestrians to cross Main Street and the freeway off-ramps.

Pedestrian impacts along Main Street would also reflect the increases in pedestrian vehicle conflicts. Five office projects either are proposed or under construction in the block bounded by Mission, Main, Howard and Spear Streets (another project is proposed at the southeast corner of Spear/Howard). Additional office projects (i.e., the Federal Reserve Bank and Pacific Gateway projects) have been approved within 1 block of the Mission/Main/Howard Spear Streets block. These projects would cumulatively affect pedestrian travel along Main Street.

There are currently 7 driveway curb cuts along the east side of Main Street between Mission and Howard Streets. These driveways total about 100 lineal feet of the 600-foot block face. Six of the 7 driveways serve freight loading needs and have minimal vehicular activity. The driveway adjacent to the Spear/Main Street project site now serves a 110-space surface parking lot. This lot primarily serves long-term employee parking demand, and vehicular activity and therefore is focused at the morning and evening commute periods (7:00-9:00 a.m. and 4:00-6:00 p.m.).

The existing sidewalk along Main Street is partially obstructed by planters boxes, newsstands, etc. and the effective sidewalk width is about 8-12 feet. The width of Main Street (between curbs) is 52.5 feet.

The proposed Spear and Main Street, 135 Main Street and Mission/Main Street projects would involve 5 driveway curb cuts

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[1]John Flynn, Environmental Planner, Environmental Science Associates, telephone, September 25, 1981.

along Main Street. An additional driveway curb cut would remain on Main Street adjacent to an existing office building at Main/Howard Streets. The 5 new driveways and 1 remaining driveway would total about 95 lineal feet of the 600-foot block face. The new driveways would occur as follows (Figure 21 depicts existing and proposed driveways and sidewalk and street widths):

- Spear and Main Street: 2 truck docks and 36 parking spaces using separate driveways;

- 135 Main Street: 2 truck docks and 22 parking spaces using separate driveways;

- Mission/Main Street: 46 parking spaces and loading/unloading functions using a single driveway.

Assuming that each of the proposed parking facilities would be designated for tenant (long-term) use, the parking turnover rate would occur primarily during peak hours. A turnover of 50% during the p.m. peak hour would result in a range of 10-25 vehicles crossing the peak hour pedestrian flow at each of the parking facilities' driveways. The truck activity at truck dock driveways probably would be minimal during peak pedestrian flow periods. Each of the proposed projects along Main Street would generate about 50-75 truck stops daily with 5-7 truck stops during the peak hour.[1]

While the number of driveway curb cuts would be reduced (from 7 to 6, including the existing driveway at the Howard and Main Street Building) with the proposed projects, it is recognized that the vehicle activity at the new driveways generally

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[1]San Francisco Department of City Planning, Final EIR, 315 Howard Street Office Building, EE 79.196, certified 21 August 1980.

would be higher than it is currently. This would exclude, however, the driveway now serving the parking lot on the Spear/Main Street site which experiences higher vehicle activity than projected at any of the proposed driveways. The elimination of the individual projects' parking garages would reduce pedestrian-vehicle conflicts at driveways. If the projects' parking garages were eliminated, a joint-use parking facility would need to be constructed in close proximity to the projects. The feasibility of such a joint-use facility, however, would be affected by land availability, funding coordination between developers, etc. It is probable that joint-use parking could only be provided through a government entity such as the City Parking Authority. The proposed projects would result in an effective sidewalk width of about 12 feet along Main Street. As discussed in the EIRs for the various projects, the pedestrian flows would increase by about 50-75%.

- No coordinated plan has been developed for curb parking designations along Main Street. The Spear/Main Street project would provide 5 truck/van loading spaces, 2 spaces in excess of the recommended number cited in the City's downtown development guidelines. It is therefore not anticipated that on-street truck loading zones would be needed for the proposed project. The existing short-term parking would continue to be an appropriate curb designation adjacent to the Spear/Main Street projects.

- The proposed intrablock pedestrian system (Figure 21, page 68) could link with a mid-block crossing of Main Street. This mid-block crossing eventually could allow pedestrians to travel under the freeway off-ramp, through the Pacific Gateway site, and across Beale Street, at a signalized mid-block crosswalk.[1] Pedestrians could gain access through an existing alley to the Transbay Terminal. If the foregoing pedestrian route could be implemented, an alternative pedestrian route would be

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[1]It is noted that Southern Pacific has not approved public crossing of its site. A parking lot would occupy most of the Pacific Gateway site.

available and mid-block pedestrian crossings of Main Street would be expected to increase. The mid-block crossing probably would be used most heavily during the peak commute hours. During these periods, office employees would be traveling via AC or Golden Gate Transit, walking to/from the Transbay Terminal. The study block would contain about 1.6 million square feet of office space which would generate about 700 peak hour trips via AC or Golden Gate Transit.[1] Many of the pedestrian trips to/from these carriers would be on crosswalks at Mission or Howard Streets. In addition, Golden Gate passengers could access the Civic Center commute routes at their Folsom/Main terminus. Based on these factors, it is estimated that 200 to 300 of the AC and Golden Gate commuters would make a mid-block crossing during the peak hour. It would be tenuous to project what portion of these pedestrians actually would use a mid-block crosswalk. For a number of reasons, pedestrians probably would make random crossings of Main Street outside a crosswalk. Main Street is a 2-lane street and pedestrian crossings are facilitated by this width. Because the relatively light traffic flow is one-way northbound and is "metered" by the signal at Howard Street, traffic gaps would be prevalent. Pedestrians would tend to cross during these gaps and their crossings could occur throughout the block. The foregoing factors suggest that the actual use of a mid-block crosswalk would be less than 200-300 peak hour persons.

If a mid-block crosswalk were provided, the San Francisco Public Works Department would require that it be signalized.

A signal would offer a regulated pedestrian crossing of Main Street. A signal, however, would introduce a new constraint on traffic flow. The nature of this constraint would depend on the type of signal installed. If the signal were activated by a pedestrian push button, vehicle traffic would be interrupted

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[1]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, July 1980, revised October 1980.

whenever pedestrians wish to use the crosswalk. These interruptions, however, could be limited through timing adjustments of the signal controller. Based on the peak hour traffic flow and the assumption that one-fourth of the signal timing would be devoted to pedestrian crossings, it is not projected that vehicle queues would affect the Main/Howard Street intersection. The traffic volumes and projected pedestrian crossings do not indicate a need for an elevated pedestrian crossings of Main Street. If provided, such a structure probably would be used by a small percentage (less than 10%) of pedestrians.

In summary, this analysis does not conclude that a mid-block crossing of Main Street is warranted. If implemented, such a crossing would need to be signalized (as per DPW) and the signal would be disruptive to traffic flow. In addition, the mid-block crossing would not link with a mid-block pedestrian way on the west side of Main Street (through the Pacific Gateway project). Due to the foregoing factors, a mid-block crossing would not be recommended. at this time. If, however, the crossing could be implemented without a traffic signal and would link with a walkway through the Pacific Gateway project, a mid-block crossing could be of value.

6. Construction Impacts

Although no specific construction process has been formulated, it is projected that about a 2-year construction period would be required. Based upon the construction employee projections for a similar project,[1] this project would have a peak construction employee parking demand of approximately 40 spaces. This demand would compete for the limited parking available in the area.

Although the construction traffic volumes would likely not be high in relation to existing traffic (20-30 trucks daily during the excavation phase),[2] trucks and other construction traffic in the area could disrupt traffic flow. Trucks and equipment could intermittently block a lane or portions of the adjacent Main and Spear Streets throughout the construction process. In addition, construction activities would likely encroach onto sidewalks, causing a reduction in sidewalk widths and more pedestrian congestion.

The construction activity associated with the approved and proposed projects in the area could have a cumulative effect on Muni service. In addition to the 101 Mission project (approved) and the proposed Spear and Main Street office building, two other office projects are proposed for the block bounded by Mission, Main, Howard and Spear Streets. Although deliveries would probably occur on the side streets (Main and Spear), the additional truck traffic could be disruptive to the numerous Muni lines on Mission Street. If trucks double park, Muni vehicles would be forced to maneuver around these vehicles. Muni service could also experience delays if the truck activity is disruptive. The proposed project would not result in the actual closure of traffic lanes. Adjacent to other projects in this block, the parking

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[1]San Francisco Department of City Planning, Final Environmental Impact Report, 315 Howard Street Office Building, EE 79.196, certified 21 Auguest 1980.

[2]Section III.D. Impacts, Noise, Page 73.

lanes would probably be taken for use as pedestrian walkways. Without parking lanes, trucks or other vehicles could double park in a traffic lane, further disrupting auto traffic in general and Muni buses in particular.

7. Summary of Transportation Impacts

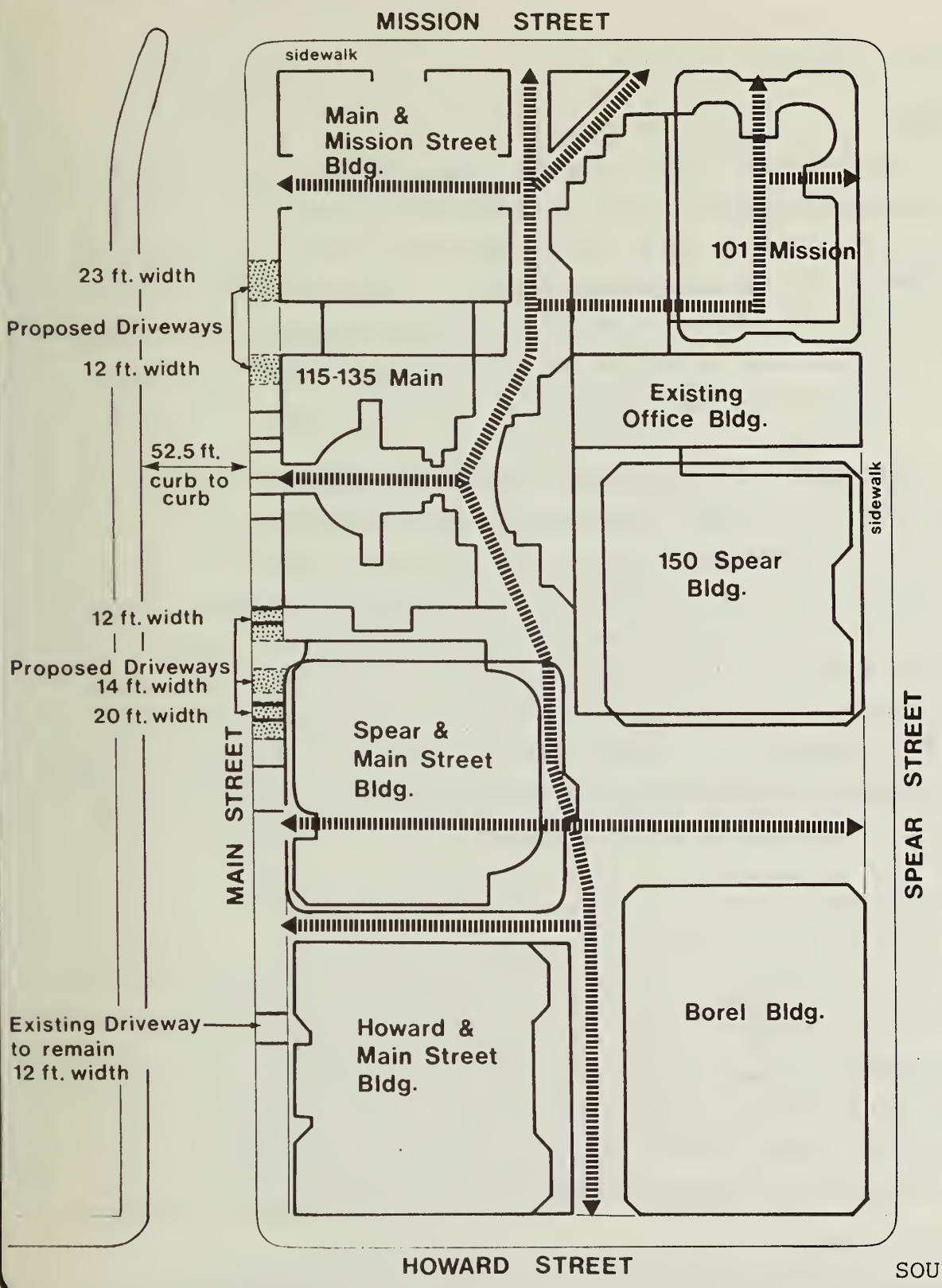
As outlined in the foregoing sections, the downtown office projects would have cumulative impacts on the overall transportation system. Those projects approved through October 1981 would add 30-35% to downtown travel during the p.m. peak hour. An additional 30% increase would result from those office projects proposed through october, 1981.

The freeways, freeway ramps and major streets accessing the freeways would experience increases in traffic congestion. Vehicle queues would increase and peak hour flow conditions would probably extend throughout the 3 - 6 p.m. period.

All of the transit carriers would be at capacity. passenger loads would be partiuclarly heavy on Muni, BART, Golden Gate and SamTrans. Peak hour buses and trains would be crowded with uncomfortable conditions for all passengers. Vehicles would probably be crowded to the extent that buses would pass up waiting passengers and trains would be unable to admit passengers waiting at platforms. The peak hour congestion would be extended to 2-3 hours.

Parking facilities would be directly affected by cumulative growth. Parking impacts would relate to the inconvenience for downtown employees and visitors forced to park farther from their destinations. A secondary effect would be the increased parking and traffic in neighborhoods removed from the downtown area. Some motorists might seek parking (both curb and off-street) in peripheral areas and ride Muni to/from downtown. This parking demand would remove spaces from local residences/businesses. It is also possible that parking inconvenience could cause some commuters and/or visitors to shift to an alternate transportation mode. Some persons might elect to join carpools/van pools or might use public transit.

In summary, the transportation analysis suggests that cumulative downtown development would have major consequences. The magnitude of the impacts would require increases in the system capacity and/or changes in travel habits (i.e. van pool usage, work hour changes, etc.).



Block 3717 Pedestrian System

North

0 25 50 100
Scale Feet

Pedestrian Walkway

Source: Richard Hedman, Principal Planner for Urban Design, S.F. Dept. of City Planning

Figure No. 21

C. CLIMATE AND AIR QUALITY

1. Climate

The existing winds near the project site would remain unchanged by construction of the proposed project. The upwind presence of the Financial District and Market Street highrise areas reduce wind strength at the site. Five additional high-rise buildings are either planned or under construction within one block of the site (Section II.A. Land Use, page 18). The effect of these buildings would be to increase shelter at the site.

Shadows from the proposed building would be cast in a westerly direction in the morning, northerly direction near midday, and an easterly direction in the late afternoon (see Appendix B, page A-16). Because of its location on the southwest side of the block, shadows would be cast across the rooftops of existing buildings at midday and in the afternoon. The project would increase (infill) shadows along the surrounding Streets.

The pedestrian walkway extending from the building lobby to Spear Street would be shaded by the project and/or existing buildings in all seasons except summer.

2. Air Quality

Construction activities would generate pollutants in the vicinity of the project. Trucks and equipment would release exhausts, and earthmoving and grading would generate dust and suspended particulates. Available emission factors[1] previously developed for shopping centers and housing construction in suburban desert areas do not apply to downtown construction and are not useful for emission comparison to the proposed project.

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[1]U.S. Environmental Protection Agency, Compilation of Air Pollution Emission Factors, 2 April 1977.

Construction dust and particulates from BART construction in San Francisco did cause measured levels of total suspended particulates to exceed the state and federal standards on several occasions.[1] Construction materials such as plants, solvents and asphalt would emit pollutants for a time after installation. Such materials would be subject to regulation by the Bay Area Air Quality Management District.

Atmospheric emissions from the project would be from combustion of natural gas for water and space heating. Natural gas is a relatively clean-burning fuel compared to oil or coal and no visible fumes or odors would occur. Exhaust gases would be emitted at rooftop level and would be diluted to concentrations below the ambient air quality standards before reaching ground level, but such emissions would contribute to an increase in background levels of pollutants.

The project would act as an indirect source of atmospheric emissions by generating automobile traffic. On the local scale, carbon monoxide (CO) is the most important pollutant emitted by automobiles. Projected carbon monoxide concentrations for 1983 near the site with the project and other anticipated projects were calculated using traffic volumes presented in Chapter III.B. Transportation Impacts (page 55). Results for worst-case meteorological conditions are summarized in Table 8, page 71. A background concentration of 3.0 parts per million has been included. These concentrations represent the exposure a person would have at curbside. The highest concentration would occur along Howard Street during the p.m. peak hour. Carbon monoxide levels would drop off rapidly with distance from curbside. No violations of the standards are indicated.

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[1]Mike Basso, Air Pollution Meteorologist, Bay Area Air Quality Management District, telephone conversation, 13 May 1981.

Similar effects would occur for lead concentrations. Prediction of roadside lead concentrations is not possible; however, lead levels would continue to decrease despite project traffic, as leaded gasoline is phased out. Sulphur is not a major constituent of vehicle exhaust.

The regional impact of the project would be due to the increase in Vehicle Miles Traveled (VMT) associated with the project.

TABLE 8

Curbside Carbon Monoxide Concentrations
in 1983
(parts per million)

	1-hour	8-hour
Beale Street	6.0	3.8
Howard Street	8.7	3.7
Spear Street	5.2	3.6
Federal Standards	35.0	9.0

Based upon transportation estimates of trip generation and destination (see Chapter III.B., page 55), the daily regional increase of VMT due to the project is estimated at 41,000. Using updated composite emission factors supplied by the Bay Area Air Quality Management District[1] and assuming an average trip speed of 25 mph, total regional emissions from the project traffic are estimated in Table 9, page 72.

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[1]Emission factors provided by Mike Kane, Engineering Division, Bay Area Air Quality Management District.

TABLE 9

Regional Automobile Emissions
(tons/day)

Pollutant	1983 Project Emissions	1983 Regional Emissions[1]
Carbon Monoxide	0.89	1,365
Hydrocarbons	0.07	865
Nitrogen Oxide	0.09	730

Increases in hydrocarbons and oxides of nitrogen result in the formation of photochemical oxidants. A 1979 study of regional air quality[2] found that photochemical oxidants would be a persistent problem in the future in the Bay Area, and that reductions in hydrocarbons and oxides of nitrogen emissions would be necessary to attain the federal standard for photochemical oxidant (ozone) in the region. The project's emissions would represent an increase of, at the most, 0.04% in regional emissions of the 3 pollutants listed in Table 9. Photochemical oxidant modeling conducted for the proposed Yerba Buena Center[3] showed that the emissions from that project would result in no measurable change in Bay Area oxidant concentrations. The regional emissions for the proposed project would be about 5-10% of those for the Yerba Buena project; therefore, no measurable effect on regional oxidant concentrations would be anticipated. However, the increase in regional emissions due to this project and cumulative growth in San Francisco would delay the attainment of the ozone standard in the Bay Area by an unknown amount.

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[1]Bay Area Air Pollution Control District, Air Pollution and the San Francisco Bay Area, June 1977.

[2]Association of Bay Area Governments, 1979 Bay Area Air Quality Plan, January 1979.

[3]San Francisco Department of City Planning and San Francisco Redevelopment Agency, Final Environmental Impact Report, Yerba Buena Center, EE 77.220, certified January 1978.

Indoor Air Pollution

Indoor air within the proposed building would be affected by cigarette smoke and gases released by some building materials. Cigarette smoke generates particulates and carbon monoxide, and building materials are known to generate radon, a radioactive gas, and organic gases such as formaldehyde. The human exposure to these pollutants would be primarily determined by the rate of ventilation. However, the rate of air exchange required inside the building to prevent gases building to toxic levels cannot be predicted.

D. NOISE

Compatibility With the Existing Noise Environment

San Francisco has adopted guidelines for determining the compatibility of various land uses with different noise environments. For offices, the guidelines state that in an exterior noise environment of 70 Ldn, "new construction and development should be undertaken only after a detailed analysis of the noise reduction measurements is made and needed noise insulation features are included in the design."[1]

The proposed structure would contain fixed windows. This would reduce traffic noise by about 30 dBA. Instantaneous maximum sound levels of about 85 dBA are expected along the Main Street side of the building and outside the retail shops facing Main Street. Interior maximum sound levels of up to 55 dBA would be expected as trucks pass the site. The traffic-generated Leq inside the perimeter rooms of the building facing Main Street would be about 40 dBA and about

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[1]Transportation Noise Section, Environmental Protection Element of the Comprehensive Plan of the City and County of San Francisco.

35 dBA in the perimeter rooms facing Spear Street. An Leq of 45 dBA would be considered the upper limit of acceptability for traffic noise in a private or semi-private office or small conference room where good listening conditions are desired.[1] The average sound levels would therefore be compatible with the proposed use. The projected instantaneous maximum levels of up to about 55 dBA could interrupt the speaker talking in a normal tone of voice in a small conference room. These maximum levels would not interfere with telephone conversations; however, they would be sufficiently high to cause some distraction.

Noise Impact on Adjacent Land Uses

Post-construction operation of the Spear and Main Street building could affect the existing acoustic environment in the area in 2 ways: by generating additional traffic in the vicinity, therefore causing an increase in overall traffic noise levels; and by adding to the noise environment the sounds of mechanical equipment associated with the building.

The amount of traffic generated by the building during any hour of the day would cause noise levels to increase by less than 1 dBA on any of the adjacent streets. A 1 dBA increase in environmental noise is undetectable by the human ear. The cumulative increase in traffic generated by proposed downtown development over the next couple of years is projected to be about 30% south of Market Street (see Chapter II.B., Transportation, page 20). This increase would result in about a 1 dBA increase in environmental noise levels. Hence, from a cumulative standpoint, the noise environment would continue to gradually increase.

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[1] American Society of Heating, Refrigeration and Air Conditioning, ASHRAE Handbook and Product Directory, New York, New York, 1976.

San Francisco's noise ordinance limits the amount of noise mechanical equipment can emit throughout day and nighttime hours.[1] The noise ordinance requires that noise from the mechanical equipment at the proposed building not exceed 60 dBA between 10 p.m. and 7 a.m. and not exceed 70 dBA between 7 a.m. and 10 p.m. at the property line of the property affected by the noise emissions in C-3 zones. This level would be at or below the existing background noise level in the vicinity of the site and no increase in noise levels due to mechanical equipment would be expected.

Construction Noise Impacts

Construction noise in San Francisco is also regulated by the noise ordinance which requires that all powered construction equipment except impact tools and equipment not emit more than 80 dBA when measured at a distance of 100 feet. Impact tools and equipment including pavement breakers, jack hammers, and piledrivers must have both their intake and exhaust muffled to the satisfaction of the Director of Public Works. The ordinance further requires a special permit for construction after 8:00 p.m. and before 7:00 a.m.

Construction of the Spear and Main Street building would take place in 3 phases: excavation, foundation construction, and building erection. Construction noise levels would fluctuate measurably depending on the following variables: the phase of construction, the duration, the type(s) of equipment used during each phase, the noise emitted during its noisy mode of any particular item or items of equipment in use, the proportion of the day during which the equipment would be operated in its noisy mode, the mobility of the equipment (e.g., the noise source might be a

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[1]San Francisco Municipal Code, Section 2909, Fixed Source Noise Levels, 1972.

stationary air compressor or a self-propelled backhoe), the distance between the noise source and the receptor, and the noise propagation characteristics of the path between the noise source and the receptor (e.g., shielding by a barrier or intervening building would result in a reduced noise level at the receptor). The worst-case noise impacts associated with the various phases of construction have been estimated.

During excavation and site leveling, bulldozers, graders, haul trucks and front-end loaders would be expected on the project site. These pieces of equipment generate from 64 to 79 dBA at 100 feet. Twenty to 30 trucks per day would enter and leave the site for a period of about 2 weeks during the excavation and site leveling phase. During foundation construction, the major noise source would be pile driving, which would last about 3 weeks. During pile driving, noise levels of approximately 105 dBA at 50 feet could be expected. After the pile driving phase, concrete pumpers, power saws, cranes, air compressors, engine generators and impact torque wrenches would be the major noise sources. These pieces of equipment emit from 70 to 95 dBA at 50 feet. The impact wrenches emit the highest noise levels of 95 dBA at 50 feet, as measured in downtown San Francisco. The impact wrenches would be used intermittently during the framing of the building.

The occupied land uses nearest the construction site are buildings located at 120 (Borel Building) and 180 Howard Street (Howard and Main Building) south of the site and a brick building located north of the site on Main Street. The Rincon Annex Post Office is located across Spear Street from the site. The 120 and 180 Howard Street buildings appear to have about 75% glass facades. These buildings are within about 25 feet of where piles would be driven. At this distance, noise levels outside the buildings could reach about 110 dBA during pile driving. Noise reduction provided by these buildings is estimated to be about 25 dBA which would result in pile driving noise levels of about 85 dBA inside the buildings. Office workers would not be able to

carry on a conversation, would not be able to use the telephone and would be distracted from their work and would probably complain to the management. In addition to the noise levels generated by this activity, vibration levels would be great enough to shake the building. Pile driving sound levels in the brick building to the north of the site would be about 75 dBA inside. Sound levels in the Rincon Annex would be expected to reach about 70 dBA inside. These levels would be high enough to distract office personnel from their work.

During the use of impact wrenches directly outside the adjacent Howard Street buildings, noise levels could reach 100 dBA outside and about 75 dBA inside. This activity would be sporadic but workers in offices nearest the noise source would not be able to use the telephone or carry on a conversation when the impact wrenches would be in use.

Trucks going to and from the construction site would not be expected to generate sound levels higher than existing truck and bus traffic in the area. The construction truck traffic would not result in a measurable change in the average noise environment in the area.

E. VISUAL QUALITY AND URBAN DESIGN

The pedestrian walkway extending from the building lobby to Spear Street would contain curves defining the edge of planted areas containing trees, shrubs and groundcovers and appear as an informal garden entry to the east side of the building. The entry, consisting of the walkway and planted areas would be about 46 feet wide and visually serve as open space between the 150 Spear Street buiding and Howard and Spear Street office building. A principal purpose of the landscaped entry would be to provide visual interest to occupants of the building's upper floors and adjacent structures.[1]

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[1]Cathal O'Doherty, project director, Jorge De Quesada, Architects, personal communication, 17 September 1980.

The corners of the building would be truncated, set at a 45° angle to the building sides. The truncated building corners would be reflected in the angled form of 4 bays extending 3 feet on the building side facing Main Street (Figure 10, page 14). A similar extension of the building's face would occur on the opposite side of the structure, but would consist of 1 broader element rather than 4 elements. These extensions on 2 sides of the building would serve to break up the perceived mass of the structure, as defined by its width, length and height, creating visually apparent building sections comprising the total form of the structure. Vertical columns extending 2 stories in height around the building's perimeter would be exposed on 4 sides, visually defining a base on which upper floors of the building would appear to be situated (Figure 4, 5, 6 and 7, pages 7, 8, 9 and 10).

A horizontal line of windows at each floor (from the 3rd level up) would distinguish each level to the observer. The spandrels[1] would be fabricated of precast concrete panels containing dark red brick tile on the exterior surfaces, adding visual interest to the building while reducing apparent building mass. Vertical columns that support the building would be visible (exposed)on one side (the building face), relieving the horizontal appearance of windows and spandrels.

Visual interest to pedestrians would be provided by retail shops with windows for viewing the building's interior at ground level and through the use of textured surface paving beginning from the building's entry at Main Street, extending through the lobby and continuing along the plaza to Spear Street. Decorative, shade tolerant plantings of the plaza and a multiple level waterfall/fountain would also provide visual interest to pedestrians near the structure's Spear Street

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[1]Spandrel: In a multi-story building, a panel-like area between the top of a window on 1 level and the sill (base) of a window in the story above.

entry. Street trees would be provided along the Main Stret frontage and along the pedestrian walkway adjacent the east side of the building.

There are a number of policies contained in the Urban Design Plan of the San Francisco Comprehensive Plan that would relate to the project area and the proposed building.[1] The Urban Design Plan is meant to serve as a guide to new development, so that the physical environment is not be abruptly or severely disrupted.

Conservation Policy 6: " Respect the character of older development nearby in the design of new buildings."[2] The proposed structure would be similar to new construction, which typifies an unornamented treatment of building exteriors and repeated use of a common floor plan expressed on the outside by uniform window placement and spandrels of uniform dimension. The building spandrels would be surfaced with brick tile, reflecting the use of brick on older, lower structures constructed in the area during previous decades and the use of brick on the adjacent Borel and Howard and Main Street Buildings (figures 17 and 18, pages 41 and 43).

Major New Development Policy 6: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction."[3]

The mass of the proposed structure would visually relate to the scale, form and proportions of the majority of existing and proposed buildings near the project site, and is generally addressed by Major New Development Policy 6.

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[1]San Francisco Department of City Planning, adopted by Resolution 6745 of the San Francisco City Planning Commission, 26 August 1971.

[2]Urban Design Plan, page 25.

[3]Ibid., page 37.

City Pattern Policy 1: "Recognize and protect major views in the City with particular attention to those of open space and water."[1]

Views from nearby buildings below about the 4th floor are confined to short distances due to surrounding buildings and elevated freeway ramps. The proposed structure would not be expected to block pedestrian views and views from other buildings below the 4th floor level to a greater degree than currently exists. However, at increasing heights in adjacent buildings, views from those buildings would be blocked up to the building's 19th-floor level; the degree of view blockage would vary with respect to observer elevation and location in relation to the project. Generally, the farther away from the project the observer would be located, the less view blockage that would be expected to occur. A reverse condition would also be expected with respect to the proposed structure. Generally, offices on the upper floors of the structure would provide views of the Financial District, San Francisco Bay, Treasure Island, the East Bay Hills and portions of the San Francisco skyline. Because the structure would be located 15 feet from the north face of the Howard and Main Street Building, there would be restrictions in outward views available between both buildings. Also, proposed structures north and west of the project site would block views from the project.

Major New Development Policy 9: "Encourage a continuing awareness of the long-term effects of growth upon the physical form of the City."[2]

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[1]Urban Design Plan, page 10.

[2]Ibid., page 40.

City Pattern Policy 3: "Recognize that buildings, when seen together, produce a total effect that characterizes the City and its districts."[1]

As noted, the building would be seen from vantage points throughout the project area. The building would be visible from the west end of the Bay Bridge span (see Figure 22, page 82). Cumulatively, the structure would contribute incrementally to the total mass of buildings defining the San Francisco skyline. The structure would be seen as a new element taking its place in the City's emerging urban form comprised of taller buildings over an increasing land area including the Financial District and South of Market area. The structure would be seen as one element in a group of highrise buildings defining the higher skyline along Market Street and the Financial District.

Current trends indicate that future development of land adjacent or close to the project site would consist of buildings taller than the existing older structures they would replace. New structures would be seen to extend the existing Financial District highrise development pattern north of the project area, closer to the project site and block views to buildings of the Financial District from the west end of the Bay Bridge. It would be expected that the proposed structure would be visually absorbed, in varying degrees through time, into the City's skyline profile.

F. SOILS AND SEISMICITY

1. Soils

Due to the relative lack of strength and stability of underlying soils, the proposed building would be constructed on piles. Pile foundations which penetrate through the soft mud to stronger material would reduce or eliminate vertical settlement of the structure. However, lateral movement of the

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[1] Urban Design Plan, page 10.

View toward Project Site from West End of Bay Bridge Span

Figure No. 22

soft mud layer, or settlement, could subject the piles to overloading by downdrag forces in addition to the building loads.

Prior to the construction of some buildings, dewatering of the ground to below the foundation is required. Groundwater can loosen sands and soften clays, resulting in hazardous excavation. Dewatering of the ground by pumping could cause settlement of soils on the site and in neighboring areas, damaging existing buildings, streets, sidewalks and utilities if mitigation measures were not implemented. Because the exact depth to groundwater at the project site has not been determined, it is not yet known if dewatering would be required for basement construction.

2. Seismicity

Seismic activity on a major fault in the San Francisco Bay Area could cause hazards to the human environment. If proper design of foundation and structure were not implemented, major building structural damage or collapse could occur due to ground-shaking and ground failure. Liquefaction[1] is also a potential hazard on the site.

If a severe earthquake, such as the 1906 San Francisco earthquake of estimated Richter magnitude 8.3,[2] were to occur along the San Andreas Fault in the Bay Area, violent ground-shaking would occur. The project site is located on zone B on the map "Estimated Intensity of Future Groundshaking" (see Figures 23a and 23b, pages 84 and 85).[3] Groundshaking, which is

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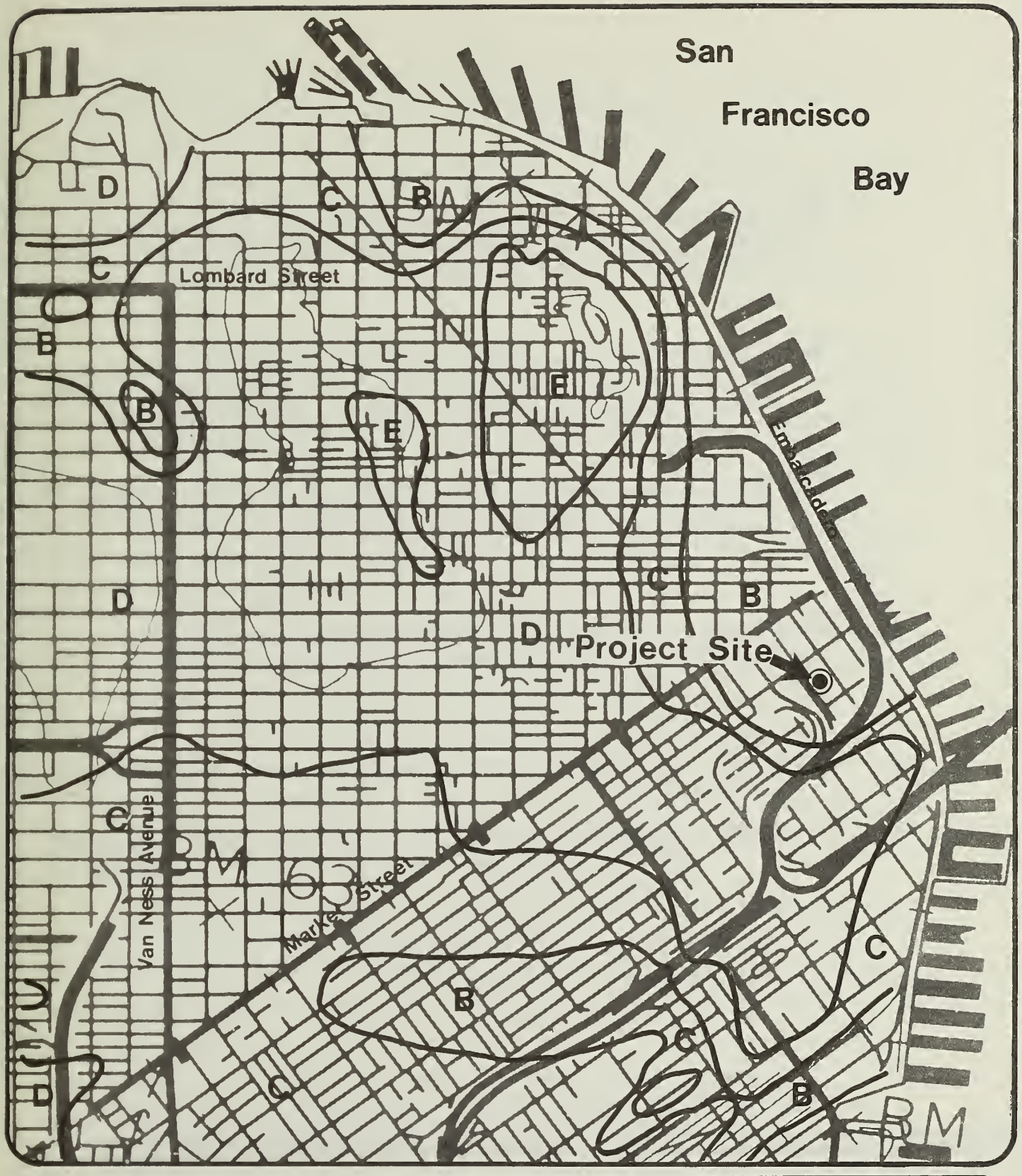
[1]Liquefaction: Earthquake-induced transformation of a stable granular material, such as sand, into a fluid-like state, similar to quicksand.

[2]Richter Scale: A logarithmic scale developed by Charles Richter to measure earthquake magnitude by the energy released, as opposed to earthquake intensity as determined by effects on people, structures, and earth materials.

[3]URS/John A. Blume, "San Francisco Seismic Safety Investigation," prepared for the Department of City Planning, City of San Francisco, June 1974.



Estimated Intensity of Future Ground Shaking
(Refer to Legend, Figure 22b)

North

0 1,000 2,000 4,000

Scale Feet

Source: San Francisco Seismic Safety Investigation, John A. Blume & Associates, June, 1974

Figure No. 23a

A Very violent. Cracking and shearing of rock masses. Deep and extended fissuring in soil, many large landslides and rockfalls.

B Violent. Fairly general collapse of brick and frame structures when not unusually strong. Serious cracking of better buildings. Lateral displacement of streets, bending of rails and ground fissuring.

C Very strong. Masonry badly cracked with occasional collapse. Frame buildings lurched when on weak underpinning with occasional collapse.

D Strong. General but not universal fall of brick chimneys. Cracks in masonry and brick work.

E Weak. Occasional fall of brick chimneys and plaster.

NOTE: Intensities are given for earthquakes similar to the 1906 event in Magnitude and proximity to San Francisco.

Legend:

Estimated Intensity of Future Ground Shaking

Figure No. 23b

caused by ground-transmitted seismic waves, would be expected to be of high intensity due to wave amplification in soft, unconsolidated soil (hence, the "B" zoning designation on Figure 23a). Violent groundshaking indicates general collapse of weakly built brick and frame structures; well-constructed buildings would be subjected to serious cracking; and there would be lateral displacement of streets, bending of rails, and ground fissuring.[1]

One possible secondary effect of groundshaking would be lateral spreading, which results from loss of strength in fine-grained, cohesive materials, and manifests itself in squeezing of soft, saturated clays such as Bay mud. Spreading can cause rapid or gradual loss of strength in foundation materials, and structures can either gradually settle or break up as foundation soils flow laterally. Where Bay muds become more consolidated, this effect would lessen in severity.

Lurching is another secondary effect of groundshaking. It occurs when large amplified waves from an earthquake result in surface cracks in relatively stiff fill overlying Bay mud. During the 1906 earthquake, lurching was a prominent feature in the tidal mud flats of Tomales Bay and in the uncontrolled fills of downtown San Francisco. Where the Bay muds reach equilibrium under the weight of the fill, the likelihood of lurching would decrease.

The project site is located in an area of liquefaction potential.[2] Liquefaction could result during violent ground motion in saturated, cohesionless sands and sandy fill materials, but is not a major hazard in cohesive Bay muds.

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[1]URS/John A. Blume, "San Francisco Seismic Safety Investigation," prepared for the Department of City Planning, City of San Francisco, June 1974.

[2]Ibid.

The susceptibility of the natural soils in the vicinity of the proposed project site to compaction, liquefaction or internal disintegration during an earthquake is considered relatively low.[1] The loose, partially saturated fill could, however, be subjected to such hazardous phenomena during a major earthquake as occurred in the project area during the 1906 earthquake.[2]

3. Tsunamis

Tsunamis, or great sea waves, can be generated by any large-scale, short-duration disturbance of the ocean floor.[3] An undersea earthquake of Richter magnitude greater than 6.5 and focal depth of less than 32 miles is capable of causing a tsunami.[4] Since tsunamis usually effect the California coast as rapidly changing tides,[5] the proposed project would be in greater danger from flooding than from impact force of a great wave.

The maximum projected runups (rise in water level) at the project site are 5.0 feet for the 100-year flood and 8.4 feet for the 500-year flood above Mean Sea Level.[6] If either occurred during high tide each would be up to 2.5 feet higher. The 100-year, high tide runup would cause up to 0.5 feet of flooding at the site. The 500-year, high tide runup would cause between 2 feet and 4 feet of flooding at the site.

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[1]Lee and Praszker, "Geotechnical Input, for EIR, 101 Mission Street, San Francisco," July, 1980.

[2]Ibid.

[3]American Geological Institute, Glossary of Geology, Washington, D.C., 1980.

[4]Pierzinski, Diane, "Tsunamis," California Geology, Sacramento, California, March 1981, page 58.

[5]Ibid, page 59.

[6]Garcia, A. and L. Houston, Type 16 Flood Insurance Study, U.S. Army Corps of Engineers Tech. Rept. H-75-17, November 1975, Figure 56.

G. HISTORICAL RESOURCES

According to a reference document on the San Francisco Waterfront,[1] earth fill of the Bay in the project area during the post-Gold Rush period has been found to be historically valuable because of the sunken hulks contained in the fill. There is a map contained in the reference library of the Maritime Museum titled Gold Rush Vessels Beached, Scuttled, or Broken Up, which was prepared through archival research about 1964 by Karl Kortum, Museum Curator, and staff members Harlan Soetan and Alfred Harmen.[2] Inspection of the map shows that most buried hulks are located in the vicinity of Telegraph Hill, and that others are known to exist along the waterfront. A hulk labeled "Supply Ship" is shown with the stern located under the intersection of Mission and Main Streets and the bow pointing slightly to the west further north on Main Street just past the intersection. No buried hulk is shown to be located on the project site or the block.

About 12 feet of excavation would be required to construct the new building. It is not possible, based on the existing record, to rule out the possibility of encountering historical resources or a buried hulk (or a portion thereof) during excavation for the proposed structure.

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[1]Roger and Nancy Olmsted, The San Francisco Waterfront: Report on Historical Cultural Resources, prepared for Wastewater Management, December 1977.

[2]The map is currently being prepared for publication, although a publication date has not yet been set. Copyright: San Francisco Maritime Museum. Source: Justine Shultz, Museum Librarian, telephone conversation, 29 April 1981. The map has not been revised since 1964, and ships not shown on the map have been discovered during excavation for other buildings.

H. COMMUNITY SERVICES

1. Police

An increase in office space and employment in the project area could increase the number of petty theft incidents. However, it is not anticipated that the proposed project would place an additional demand on police services, and patrols would not be increased. The cumulative effect of growth South of Market may eventually necessitate a foot-patrol in the project area.[1] The Moscone Convention Center, located between Folsom, Howard, 3rd and 4th Streets, would be located about 5 blocks from the project site. Completion of the Convention Center may require additional personnel due to the presence of convention attendees.

2. Fire

Annual consumption of water from the high-pressure fire-fighting line would be limited to sprinkler flow alarm testing unless there were a major fire in the proposed building. Self-contained fire and life safety systems consisting of sprinklers, alarms and smoke removal systems would be provided as required by Section 1807 of the San Francisco Building Code.

Implementation of the project could generate more resuscitation (rescue and first aid) calls than previously experienced at the site. The proposed project would not require additional manpower or equipment.[2] However, increased highrise development could cumulatively generate a need for more fire protection services.

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[1]Paul Libert, Officer, Planning and Research, San Francisco Police Department, telephone communication, 3 November 1980.

[2]Eugene Calamoneri, Captain, Planning and Research, San Francisco Fire Department, telephone communication 3 November 1980.

3. Water

Current average daily water use in San Francisco is 80 million gallons per day. At full occupancy the project would consume approximately 32,600 gallons per day by the building's occupants,[1] and up to 500 gallons per day for site landscaping during summer months. The presence of a 20-inch water transmission line beneath Main Street indicates there are sufficient water and distribution facilities for numerous potential consumers in the area. Water pressure and supply are adequate to serve the proposed project. The Water Department anticipates no difficulty in providing service to the site or other proposed developments in the area.[2]

4. Sewer

At full occupancy wastewater flows generated from the domestic uses of the project would be expected to be approximately 32,600 gallons per day. Sewer loads from cooling tower bleed and from landscaping would not be measurable. All sewage generated by the project would be transported to the Northpoint Water Pollution Control Plant where sewage flows receive primary treatment.

The San Francisco Department of Public Works considers the sewer system in the project area to be adequate to handle the wastewater generated by the project and other proposed

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[1]Brown & Caldwell Consulting Engineers, 1972, Report on Wastewater Loading From Selected Development Areas, as cited in San Francisco City Planning Commission and San Francisco Redevelopment Agency, 1978, Final Environmental Impact Report/ Yerba Buena Center EE 77-220, certified 25 April 1978 (office use of 125 gallons per 1,000 square feet of usable floor space and retail use of 200 gallons).

[2]George Nakagaki, Assistant Manager, San Francisco Water Department, City Distribution Division, personal communication, 3 November 1980.

buildings with the replacement and expansion of sewer lines in the project vicinity at the close of 1981.[1]

5. Solid Waste

The proposed project is anticipated to generate about 1½ tons of garbage per day. Current facilities of the Golden Gate Disposal Company could accommodate the additional load. The disposal company recommends that sufficient space be designed into the building to allow for a roll-off compactor (30 feet long x 12 feet wide x 18 feet tall). The 8-10 ton capacity compactor would require disposal once a week.[2]

I. ENERGY[3]

1. Construction

A procedure to approximately calculate energy consumed during construction is to use a gross energy consumption/dollar cost ratio.[4] Based on an estimated construction cost of about

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[1]Nat Lee, Engineering Associate, Division of Sanitary Engineering, Department of Public Works, personal communications, 3 November 1980 and 12 November 1980.

[2]Fiore Garbarino, Office Manager, Golden Gate Disposal Company, telephone conversation, 26 June 1981.

[3]The analysis of energy consumption was based on the proposed building containing a gross interior floor area of 306,500 square feet. The current revised proposal is for a structure containing about 3% less gross square feet than the original proposal. The floor area change does not require changes in the calculation of energy consumption because the figures fall within the ± 10% level of statistical validity of the methods used to predict energy consumption. The consumption of energy per square foot of floor area in the analysis remains the same.

[4]Tetra Technology, Inc., Energy Use in the Contract Construction Industry, Arlington, Virginia, 1975.

$23.5 million, it is estimated that about 61.2 billion BTU[1] of energy would be consumed during construction of the proposed project. This is equivalent to about 11,300 barrels of crude oil.[2]

2. Operation

The gas and electrical consumption estimates for the proposed structure are based on a computer analysis that was completed by Crichfield Mechanical Incorporated for a recently designed building that has similar design features as the proposed building. The computer model used is based on the assumption that natural gas would be used for space heating and domestic water heating and that electricity would be used for lighting and air conditioning. It was further assumed that the structure would comply with the requirements of Title 24 to the California Administrative Code regarding insulation, maximum lighting loads, building temperature and other energy conservation features.[3] The results of the analysis are based on the following design features being incorporated into the structure.

- All exterior walls and the roofs would be insulated.
- Tinted glass would be used in the windows.
- A lighting load of 2.75 watts per square foot.
- Drapes on the south side of the structure would be drawn on warm sunny days.
- The structure would incorporate a cooling system.
- Each floor would have an individual air handling unit.
- A heating system would be used to primarily heat perimeter areas.
- Nighttime and weekend building temperatures would be automatically set at 60 degrees Fahrenheit.
- Economizers would be installed on each floor.

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[1]BTU= British Thermal Unit. The quantity of heat required to raise the temperature of 1 pound of water 1 degree Fahrenheit at about 39 degrees Fahrenheit.

[2]Environmental Impact Planning Corporation, Energy Impact Handbook, San Francisco, 1976, Table C-10f.

[3]California Energy Commission, Conservation Division, Regulatories Establishing Energy Conservation Standards for New Residential and New Non-residential Buildings as Amended July 26, 1978, Sacramento, 1978, Table 2-1.

a. Electricity. The project's estimated average monthly electrical consumption would be about 260,000 kilowatt hours (kwh), equivalent to 0.85 kwh per square foot of gross floor space. Estimated electrical consumption curves are given in Figure 24, page 94. Because tenant use of computers has not been determined, final electrical consumption cannot be precisely determined until the tenants are known.

b. Natural Gas. The estimated average monthly natural gas consumption for the proposed project is 184 BTU per square foot of gross floor space. The magnitude of the estimated peak natural gas demand for the project is 25 therms[1] per hour. Estimated gas consumption curves are given in Figure 25, page 95. Because space heating requirements would vary with the tenant office furnishings and equipment, final gas consumption cannot be precisely determined until the tenants are known.

Title 24 regulations set a maximum allowable energy consumption for non-residential buildings with an occupancy of over 300 persons of 126,000 BTU per gross square foot of heated and cooled floor space per year. Using the electrical and natural gas consumption figures presented above, the estimated annual energy consumption for the proposed project would be 107,000 BTU per gross square foot of floor space. This is an estimate, however; final compliance would be determined by computer analysis as a prerequisite to the issuance of a building permit.

3. Transportation

Based upon transportation estimates of trip generation and destination (see Chapter III.B., page 55), the daily regional increase in Vehicle Miles Traveled (VMT) due to the project is estimated at 41,000 , equivalent to 10.3 million miles annually. The annual auto transportation

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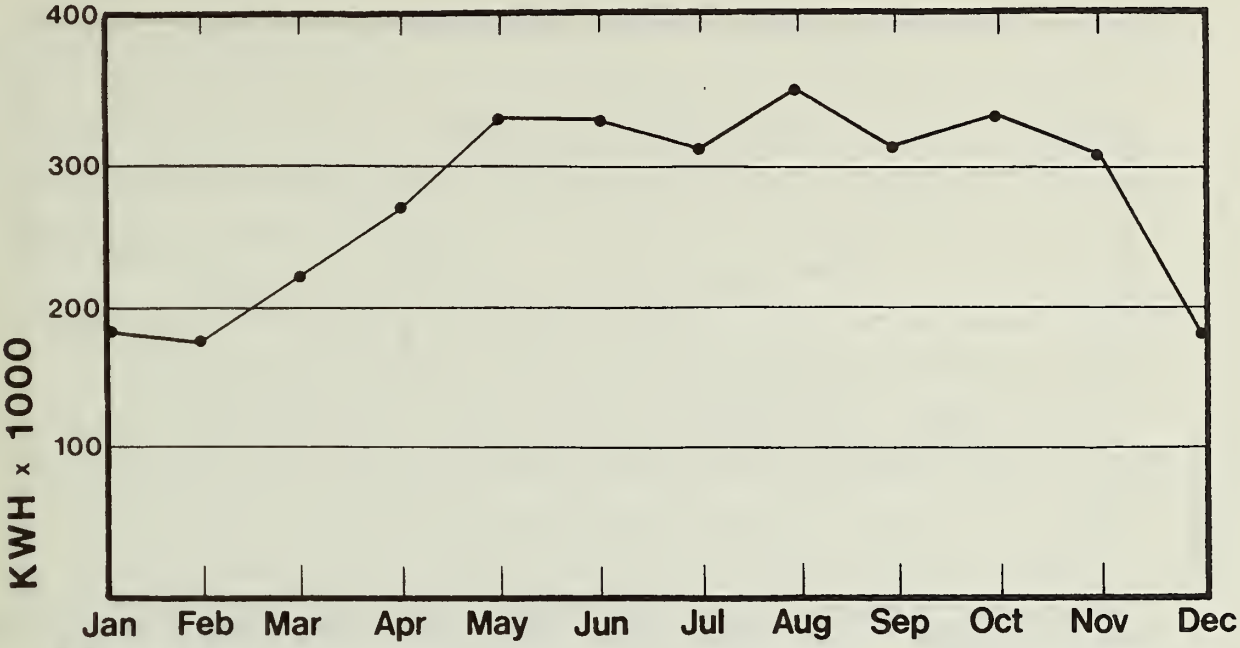
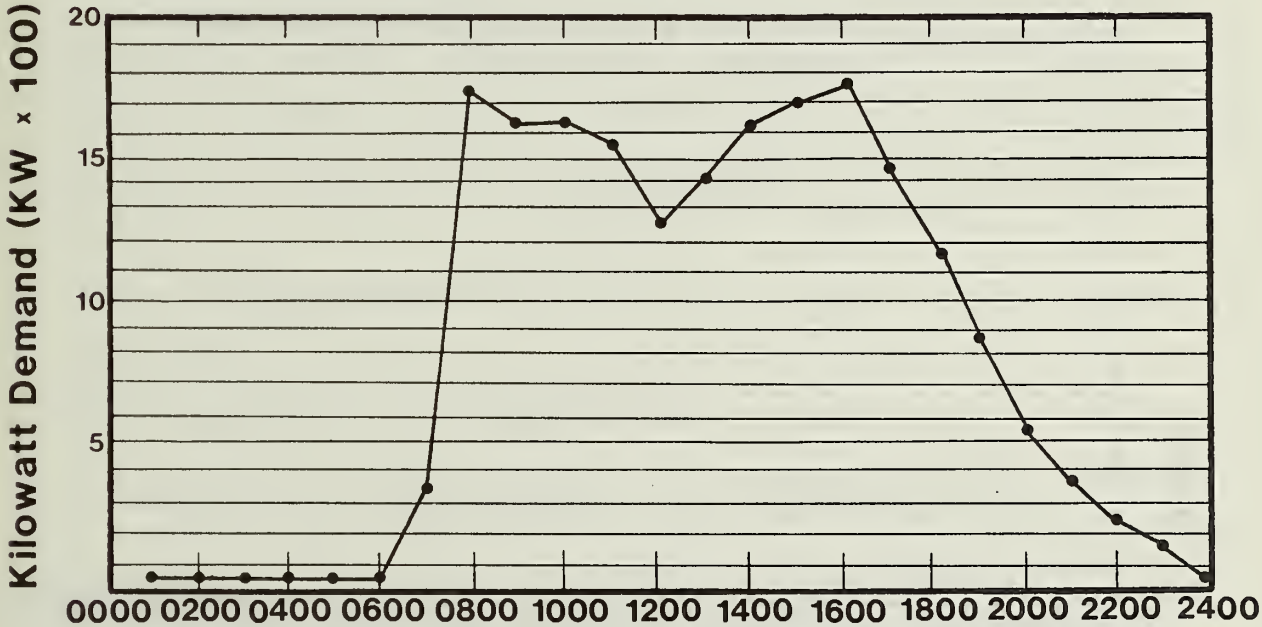
[1]Therm = 100,000 BTU.



Monthly Consumption

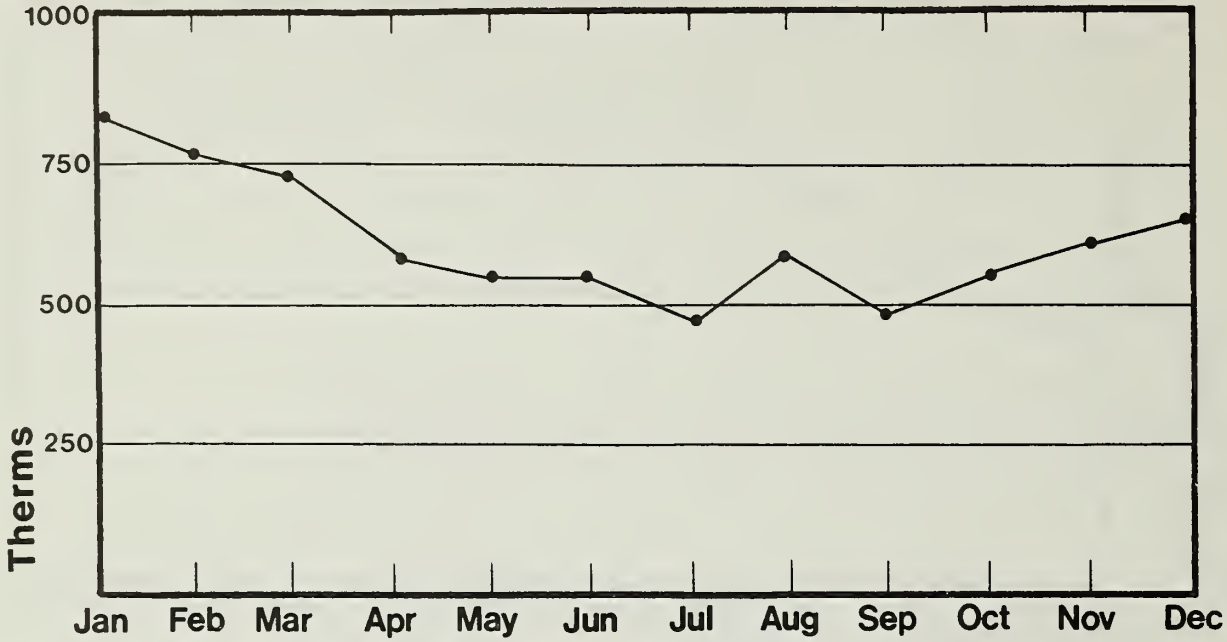


Hourly Consumption-September Peak Demand Day

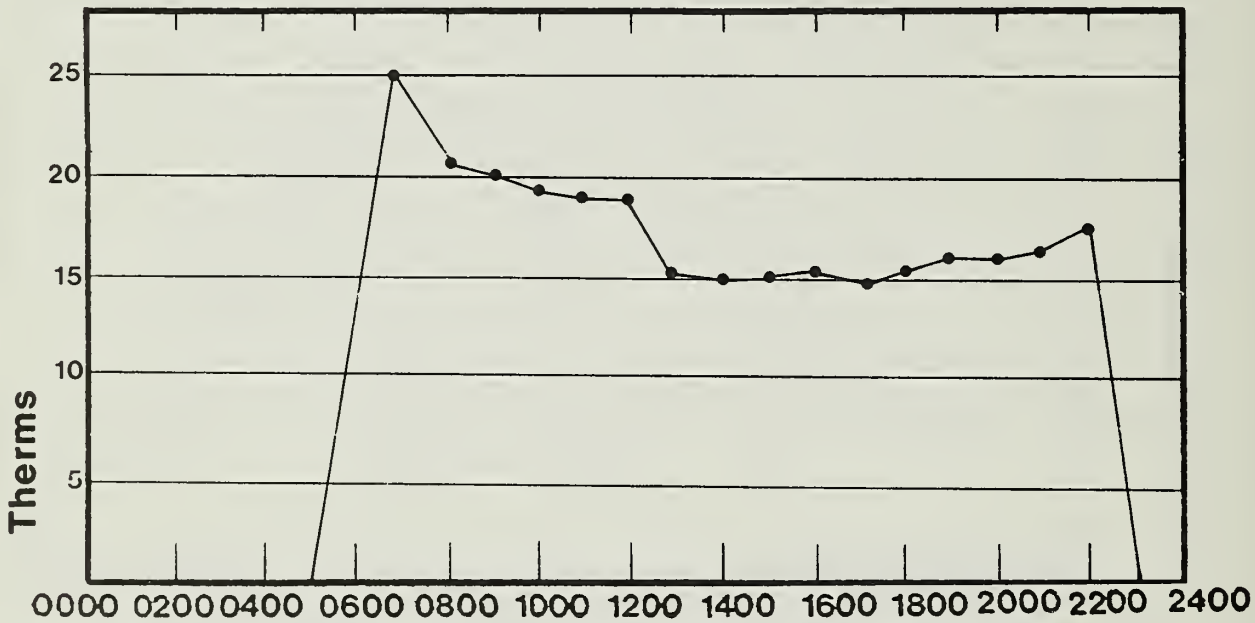
Estimated Electrical Consumption

Source: EIP Corp.

Figure No. 24



Monthly Consumption



Hourly Consumption-January Peak Demand Day

Estimated Gas Consumption

Source: EIP Corp.

Figure No. 25

energy consumption associated with the VMT increase would be approximately 520,000 gallons of gasoline equivalent to 64 billion BTU per year. Energy consumed for bus, rail and ferry transit occupants of the building would be in addition to the above quantities.

4. Removal

Building demolition activities require about as much energy as construction activities. Therefore, demolition techniques in the future remain similar in their energy use to construction energy use, as currently is the case, then the energy cost of building removal at some point in the future (perhaps 50 years or more), would be about 61 billion BTU.

5. Lifetime Energy Costs

Assuming a potential 50-year lifetime for the building, the estimated lifetime energy cost (includes construction, operation, transportation and removal) would be about 4 trillion BTU. This is equivalent to approximately 31 million gallons of crude oil.

J. ECONOMICS

1. Economic Activity and Employment

Office and Retail Space. The proposed project would add a total of about 271,600 net rentable[1] square feet of office space to the existing downtown supply without demolition of any existing office space. In addition, about 7,460 net rentable square feet would be available for commercial shops.

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[1]Net rentable: gross floor area less stairs, elevators, vertical shafts, emergency corridors, truck loading and unloading area.

The addition of the project would be an increase of less than 1% to the current supply of office space in the Central Business District.

Construction Employment. An estimated $23,500,000 would be spent during construction ($18,000,000 for the shell and $5,500,000 for interior improvements). Assuming labor costs for the shell are about 40% of the total ($18,000,000 x 40% = $7.2 million) and labor costs for the interior are about 50% of the total ($5,500,000 x 50% = $2.75 million) including direct wages, payroll taxes and fringe benefits, about $10 million would be spent on labor.[1] Assuming an annual cost including wages, taxes and benefits, of $28,000 per construction worker, a total of about 360 person years of construction labor would be generated. Project construction would be expected to take place over a 24-month period; therefore, average construction employment would be about 180 full-time jobs at any one time during construction. Peak employment would be about 220 persons. Additional short-term employment in design, engineering, planning, environmental, legal services and marketing also would be generated.

Secondary temporary employment would be generated due to demands for goods and services by construction workers and their families and in the construction materials supply industry. These secondary jobs could be estimated on the basis of a 1 to 1 ratio or 1 secondary job for every direct construction job.[2] This would be the equivalent of 360 full-time 1-year jobs in the region.

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[1]Cathal O'Dougherty, Project Director/Architect, telephone conversation, 25 September 1980.

[2]This construction multiplier has been used for several downtown construction projects in San Francisco, including the Daon Office Building Final EIR, EE79.57, certified 12 June 1980.

Permanent Employment. Employment in the new office building and the pavilion would total about 1,200 persons (including office workers, retail sales clerks, and security and maintenance employees).[1] Secondary employment would be generated through the multiplier effect. Assuming that the new permanent jobs are in the finance, insurance, and real estate (FIRE) sector, about 1,440 additional jobs in other sectors of the Bay Area Economy would result from the growth of FIRE business.[2] About 37%, or 530 of these jobs, would be blue collar jobs. The total number of Bay Area jobs that would be supported by the growth in permanent downtown employment due to the project would be 2,640.

The project sponsor intends to lease to tenants with large clerical and technical staffs so that each floor may be leased to a single tenant (e.g., engineering or architectural firms, government agencies, insurance companies).

Rents. Office space in the proposed Spear and Main Building would be expected to rent from about $2.50 to $3.30 per square foot per month, or $30 to $40 per square foot annually. Current rates for office buildings in the downtown area range from $20 to $40 per square foot annually.[3]

2. Fiscal Revenues and Costs

Assessed Valuation and Property Tax. Based on replacement costs, the minimum fair market value of the

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[1]Based on 1 employee per 250 rentable square feet of office space, 1 sales worker per 300 square feet of commercial space, and 1 security and maintenance worker per 12,500 square feet of space.

[2]This discussion follows the analysis in the Five Fremont Center Final EIR, EE 80.268, certified 12 March 1981, page 86.

[3] J. Stanisch, Senior Real Property Appraiser, Assesor's Office, City and County of San Francisco, telephne communication, 13 July 1981.

proposed project would be approximately $28.7 million in 1980 dollars.[4] Assuming the property would be assessed on the basis of the full replacement costs, the assessed value of the project would be the estimated fair market value. Total annual property tax would be $287,000 at 1% of full value allowed under Proposition 13 (or $4.00 per $100 assessed value), plus an additional levy for the repayment of existing bonds previously approved by the electorate (the current total rate for the 1980-1981 fiscal year is $4.92 per $100 assessed value) leading to a total of $356,000. It is not known at present how the property

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[4]Full replacement cost estimates include the interim financing and leasing costs as well as construction costs. See Appendix D, page A-23.

taxes would be distributed in the fiscal year 1983-1984 (estimated year of completion) under the provisions of Assembly Bill 8 and Proposition 4. Applying the 1980-1981 rate, San Francisco could receive from $244,000 to $303,000 from the project (85% of the total composite property tax revenues). Subtracting the market value of the existing land and improvements which total about $506,000, the net addition of the San Francisco property tax base would be about $28.2 million. The net increase over existing composite property tax revenues to San Francisco would be between $218,800 to $277,800.

Other Local Revenues. The project would generate new payroll, business, sales and utility users taxes which would accrue to San Francisco; Table 10, page 100, is a summary of estimated project-generated tax revenue.

Potential increased revenues to San Francisco could range from $395,600 to $463,500; however, this range is subject to a number of variables that could affect the estimate:

- Property tax distribution could change in the ensuing years.
- Payroll tax could vary according to the salaries of the employees in the proposed project.
- The estimated volume of sales in the restaurant and shops could change.
- Rents could increase, thereby affecting the gross receipts tax.
- Costs for utilities, particularly telephone, gas and electricity, are also variable.

In addition, there are indirect revenues that could accrue to San Francisco in the form of sales tax from items

● TABLE 10

Estimated Project Revenues at Full Occupancy
(1981 dollars)

	Current Revenues	Total	Gross City/County[1]	Net City/County
Property Tax[1]	$25,200	$287,000 to 356,000	$244,000 to 303,000	$218,800 to 277,800
Payroll Tax[2]	--	132,320	132,300	132,300
Sales Tax[3]	--	98,000 to 114,400	15,000 to 17,600	15,000 to 17,600
Gross Receipts Tax[4]	--	18,400 to 24,600	18,400 to 24,600	18,400 to 24,600
Utility Users Tax[5]	--	11,200	11,200	11,200
	$25,200	$546,400 to 638,500	$420,400 to 488,700	$395,600 to 463,500

[1]Assumes property tax distribution as in 1980-1981; it may be slightly different in the ensuing years. The San Francisco Unified School District and Community College District, Bay Air Quality Management District and BART would also receive property tax revenues. The ranges are based on 4% (under Proposition 13) and 0.97% (based on bond payments), which will change in several years.

[2]The business tax is actually comprised of 2 taxes: gross receipts tax and payroll tax. Revenues from these taxes would be generated by businesses which occupy the project and by owners of the project who would pay a tax on the rents they receive.

Business tax revenues have been estimated at $487,000 for every million square feet of office space in the following studies: Gruen Gruen + Associates, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, March 1981, page 116 and Arthur Anderson and Co., Downtown Highrise District Cost Revenue Study, November 1980, pages 35-38. These estimates were based on actual tax collections by the City for the C-3-0 District divided by an estimated 39 million square feet. The calculations for Spear and Main are based on 271,600 gross square feet of office space times $487,000 divided by $1,000,000.

These sources are used in this report because they are the only recent estimate of business tax revenue collections relevant to new downtown office buildings. (The SPUR Impact of Intensive High-Rise Development on San Francisco, June 1975, pages 246-248 would estimate: 1,090 x $25,650 mean payroll per employee updated to 1980-1981 dollars x 1.5% tax rate x 55% probable tax revenue = $230,600.)

[3]Estimated on 6½% of sales tax; San Francisco collects 1%.

[4]Based on net rentable space at $30 to $40 per square foot at the rate of $2.20/$1,000 of gross rental receipts.

[5]Water. The estimated annual water bill for the completed project is $18,800 ($1,202,000 cubic feet/year @ 41.4¢/100 cubic feet, plus $1.15 sewer service charge/100 cubic feet). Tax @ 5% = $940.00.

PG&E. The total annual PG&E bill is estimated at: $141,40 for electricity (@4.5¢kwh) and $2,000 for gas (@29¢/therm). Totals based on annual consumption figures projected in Section III.I, Energy Impacts. Tax @ 5% = $7,200.00.

Pacific Telephone. The estimated annual telephone bill is $51,500, a figure which would vary considerably with the type of office tenant. This estimate assumes a monthly telephone bill of $1,000/5,000 leasable square feet. Tax @ 5.5% = $3,100.00.

Total Utility Tax = $11,200.00.

purchased by those employees at the proposed project who are filling new jobs in San Francisco (i.e., people obtaining employment in San Francisco for the first time).

Costs Other Than Muni. Since 1979, a number of studies have analyzed 1 aspect or another of downtown area's impact on the City's fiscal health. Only 1 of these studies, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco (Gruen Gruen + Associates, March 1981), developed estimates of the additional public service costs of new development.[1] In this study, the consideration of costs was limited to the direct costs of services provided within the physical limits of the C-3-0 district. These cost figures are used in this EIR to provide an indication of the direct costs that would be attributable to the project for increased public services other than those associated with Muni. While a broader definition of costs could result in higher cost

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[1] Studies done by Arthur Anderson & Co. (Downtown HighRise District Cost Revenue Study, November 1980) commissioned by the San Francisco Chamber of Commerce and by David Jones (Downtown Highrise District Cost Revenue Study, February 1981) prepared for San Franciscans for Reasonable Growth examine the fiscal impact of the existing downtown. The 3 other studies address the question of what the fiscal impact of new development would be (Gruen Gruen + Associates, study cited above; Sedway/Cooke et al., "Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, October 1979; and Recht Hausrath & Associates, "Final Considerations," Appendix C, 101 Montogmery Street FEIR EE 80.26 certified 7 May 1981). Of these 3 only the Gruen Gruen & Associates study developed estimates of the additional service costs associated with new development. (See 101 Montgomery FEIR (EE80.26) pp. 191-196 for a summary comparison of these 5 fiscal studies.)

estimates, the direct costs defined here represent a large part, if not all, of the relevant costs of new development.[1]

The costs of the project would depend, in part, on the timing of the project in relation to other new projects in the City. This is because at various levels of cumulative development, service thresholds are met that require large capital expenditure. For the purposes of this analysis, it is assumed that the proposed project would be completed after the additional 10 million square feet of office space to the 1980 amount downtown, but before the addition of 15 million square feet.[2]

Direct public service costs for fire, police, public works, general government, and other services have been estimated to be $0.227 per net addition of 1 square foot

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[1]The main area of possible disagreement with the costs from the Gruen Gruen + Associates study is likely to involve the definition of costs. For example, David Jones' study criticized the use of a similar "direct cost" definition in the Arthur Anderson study, saying that downtown shold pay for services provided outside the C-3-0 area as well (noting Citywide recreation and cultural facilities like Golden Gate Park and the Performing Arts complex as examples). There has not been a study that identifies how new downtown development affects costs for these services. Nor is there agreement on definitions or an accepted methodology for how this should be done. Recognizing potential dif-ferences in definition, it is still possible to consider the direct costs defined here as at least part, if not all, of the relevant costs of new development. (Also see 101 Montgomery Street FEIR, EE 80.26 p. 310 and pp. 314-315).

[2]As shown in Table 10b about 10 million square feet will be added downtown when all of the projects approved as of November 1981 are built. Thus, it is reasonable to evaluate the proposed project as among those that could be built in the subsequent 3-4 million square feet of projects that are under review by the City, telephone conversation with Lu Blazej, City Planning, 25 January 1982.

of downtown office space.[1] The project would result in a net addition of 271,600 square feet of space. The net increase in direct costs (excluding Muni and BART) resulting from the project would be $61,700 (1980-81).

MUNI. Marginal capital and operating costs per peak period Muni ride are $0.7067.[2] Because the fare revenue per

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[1]Gruen Gruen + Associates, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, March 1981, p. 99. From the figures in Table III-42, p. 99, total additional direct service costs related to the 5 million square feet after 10 million square feet have been added to the 1980 stock downtown equal $1,494,031. This figure, minus the additional cost for Muni of $357,690, equals the direct costs of $1,136,341 for services other than Muni. This amount divided by 5 million square feet equals the cost per square foot of $0.227. (The costs for Muni are excluded here because the PUC staff has since developed more current Muni cost estimates.)

These additional direct costs generated by new downtown development were estimated on the basis of interviews with agency staff and from examination of the Arthur Anderson & Co. study of current downtown service costs, of computer print-outs from City departments, and from City budgets and appropriations documents. Cost estimates assume that current service levels downtown would be maintained as the amount of building space increases.

[2]Bruce Bernhard, "The Marginal Cost of Peak Period Muni Passenger Trips Per Unit of Office Space," San Francisco Public Utilities Commission, February 1981. "Marginal" costs represent the costs per additional peak period passenger trip. The relevant measure of the impact of the proposed project is the additional or marginal cost per passenger trip generated during peak hours. This cost estimate (in 1980-81 dollars) includes operator labor, maintenance labor, fuel or power, other direct operating costs, parts, and amortization of incremental vehicles (expressed as a weighted average of modes). This estimate includes the marginal costs incurred by added passengers from a new downtown building. It does not allocate any incremental facilities costs (garage space or storage), nor any incremental supervisory staff costs, although such costs would also be incurred at some level.

passenger trip is $0.3181,[1] the net marginal cost (or increase in the deficit) per peak period ride is $0.3886.[2] The transportation impact section (page 65) estimates there would be 290 afternoon peak transit trips on Muni. Doubling this for morning plus afternoon peak trips, there would be 580 peak hour Muni trips per day. This increased demand for Muni services would cost $58,600 (1980-81 dollars).[3] (Because the existing site is vacant, it creates no cost for Muni and so the net increase in costs, or deficit, would also be $58,600.)[4]

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[1]See Footnote 2, page 101b. Fare revenue per passenger trip is estimated assuming only adult riders, 85% of whom are estimated to use passes at a net marginal revenue of $0.286, and 15% of whom pay cash for a net marginal revenue of $0.50.

[2]Bruce Bernhard, "The Marginal Cost of Peak Period Muni Passenger Trips Per Unit of Office Space," San Francisco Public Utilities Commission, February 1981.

This estimate differs from those used in previous EIRs. The 101 Montgomery Street FEIR (EE 80.26 certified 7 May 1981) pp. 85-86 and 316-318 identified the average 1980-81 general fund deficit per ride taken with a Fast Pass at $.029. This figure did not include any capital costs. In that analysis, it was noted that while this figure was the best available estimate, it is not a good measure of the costs of providing additional Muni service downtown. Since then, the PUC staff has developed new cost information to estimate the additional or marginal costs. The net marginal cost (or increase in the deficit) per additional peak period trip of $0.3886 (1980-81 dollars) includes the capital cost for vehicles. The more recent figures were developed as part of the transit development fee cost analysis.

[3]580 peak rides per day x 260 work days per year x $0.3886 cost per ride = $58,600.

[4]The project would also help to pay for the Muni deficit through its revenue contributions to the general fund. In the 1981-1982 budget, 7% of the discretionary general fund revenues were allocated to Muni.

- BART Costs BART fares cover about 43% of BART costs.[1] For each BART passenger trip an average of $1.00 is contributed in fares, and an additional $1.33 in costs must be supported by some other revenue source. It is estimated that about 151 employees in the new building would ride BART to work. The project would generate a deficit of about $77,300 in 1981 dollars.[2]

- Direct Costs and Revenues. The proposed project would increase the general fund revenues to the City by about $395,600 to $463,500 (1983 dollars). Direct costs within the downtown area for increased services other than Muni could increase by about $61,700. Costs to the City's general fund for increased Muni service downtown would increase approximately $58,600. A proposed Transit Impact Fee could lower this amount depending on the rate of return (assuming that the fee is implemented and that there is no state or federal aid to cover vehicle capital costs).[3]

Comparing these figures indicates a net revenue increase of about $275,300-$343,200 to San Francisco. While the accuracy of the estimates could be debated, this comparison indicates that a net revenue increase would still result for the short term even if the direct cost estimates here were considered low by a factor of 100% or more. It also indicates that there would be revenue to offset other costs in addition to the direct costs included here, if other definitions of increased costs are used. Alternatively the net revenue increase could be viewed as funds available for City services other than those directly provided in the downtown area.

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[1]Department of City Planning, 101 Montgomery EIR, EE 80.26, Certified 7 May 1981, page 42.

[2]302 rides x 260 working days x $1.33 = $104,300 = $21,500 (estimated contribution of property tax at 6.3% of $1.19 tax rate per 1% assessed value) - $5,500 (estimated ½% sales tax revenue to BART) = $77,300.

[3]The transit development impact fee became law in San Francisco on 5 June 1981 (Ordinance 224-81); however, the legality of this Ordinance is being challenged and is currently pending in San Francisco Superior Court and the fee is not being collected.

Long-Term Fiscal Impact.[1] Though the project would generate revenues in excess of the direct costs it imposes initially, the difference between costs and revenues would narrow over the years. This is because costs can be expected to rise with inflation, while revenues would grow more slowly as a result of the Proposition 13 limitation on property tax revenue growth to 2% per year unless a property is sold. Other revenue sources would grow at inflation. If all current sources of revenue associated with the proposed project are held constant (i.e. fees and rates do not change and no new assessments levied) costs would eventually exceed revenues.

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[1]The conclusions here as to direction of fiscal impact are similar to the generalized conclusions in previous EIRs. (See particularly 101 Montgomery Street FEIR (EE 80.26), pp. 82-88 and 309-326.) For comparison, the 3 recent fiscal studies which considered whether the City's fiscal situation would be better in the future with or without new development answered as follows: (1) probably better (Appendix C in 101 Montgomery Street FEIR); (2) apparently better (Gruen, Gruen + Associates study); and (3) no, unless new revenue sources are found (Sedway/Cooke study, done before the Transit Development Fee was initiated). (For more comparisons, see p. 196, 101 Montgomery Street FEIR, EE 80.26).

● 3. Employment and Housing

Forty percent or about 480 of the new office employees generated by the proposed Spear and Main office building would be expected to move to San Francisco. In order to estimate their ability to afford housing in San Francisco, it is assumed that these 480 employees would have the same income distribution as all downtown office workers. Table 10a suggests that under these assumptions about 24% or 115 employees would be deterred from moving to San Francisco because they would be unable to afford the median rent for even a studio apartment.

In reality, the pattern of household movement relating to downtown employment is very complex and would probably not exactly follow the average income distribution as assumed. For example, many jobs on the lower end of the income scale would be held by secondary wage earners within the household and such households would more likely locate for convenience to the chief wage earner's job. This effect would tend to raise the actual income distribution of the project workforce moving to San Francisco. A variety of additional personal considerations would also come into play in the decision whether to move to San Francisco. Moreover, not all lower income employees would be unable to find affordable housing. The median rent statistic implies that 50% of studio apartment are rented below $440 monthly. It is evident, however, that it would be much easier for the higher income employees to make the move.

Table 10d, page 103d, indicates what proportion of those project employees who are expected to live outside San Francisco could afford the cost of the average price home in their respective locations. As in the Impacts section of Employment and Housing, the employees in each of the areas are assumed to have the same income distribution as all downtown office workers. The percentage of project employees able to afford average priced housing ranges from a low 14% on the Peninsula to a high of 23% in the East Bay. Rental housing is generally within financial range for employees, at least for smaller units. Three bedroom apartments would be affordable for

● TABLE 10a

Estmated Number of Office Worker Households Able To Afford Various Monthly Housing Costs for the Spear and Main Office Building (Based on 1981 Data)

Housing Type (Rental)	Median Monthly Cost	Number of[1] Spear/Main Employees	% Able to[2] Afford Cost
Studio Apartment	$ 440	360-370	75-77
One Bedroom	500	340-350	70-73
Two Bedroom	560	320-330	66-69
Three or More Bedrooms	590	320-330	66-69
1980 Census Median Rent	310	480	100
(Purchase)			
New Single Family	$1,570	65-75	13-16
Existing Single Family	1,497	75-85	16-18
Condominium	1,140	105-115	22-24
1980 Census Owner-Occupied Dwelling	1,215	95-105	20-22

[1]The numbers of employees presented in the table are based on the assumption that 40% of the project employees would move to San Francisco. Thus, the percentages are applied to a total of 480 employees rather than 1,200. It is further assumed that these 480 employees would have an income distribution similar to all downtown office workers as reported in the 1974 SPUR study (see Table 5a).

[2]The table assumes that all employees are part of households and does not reflect availability of housing, just the affordability. Households are assumed to spend 30% of income on housing.

53% to 79% of the households.

K. GROWTH INDUCEMENT

The new office space in the project would be available for relocation or expansion of other San Francisco firms, for firms relocating from outside San Francisco, or for newly forming firms. The project sponsors seek tenants with both professional and upper management staff with clerical and technical support staff.

The project would represent an additional growth of less than 1% to the existing high-rise office space in downtown San Francisco. Table 10b presents major office building construction in San Francisco as of 1 November 1981.

Approximately 1,200 employees (including office, managerial, retail sales, maintenance and security positions) could ultimately be located in the new building. To the extent that the project attracts new residents or commuters who would not otherwise have been attracted to San Francisco or the Bay Area, it may be viewed as employment-generating and growth-inducing, and would result in a variety of indirect growth effects. Because of an increased population, these effects would include additional demand for housing, increased demands for a variety of commercial, social, medical and municipal services, and increased use of streets, freeways and transit systems.

With respect to impacts on the existing housing supply in San Francisco, net new office employment in the City requiring additions to the existing housing supply resulting from a particular project could be analyzed in several ways. The project's effects have been analyzed as gross impacts; that is, the future with the project is compared directly to the present without the project. It is estimated that about 40%[1] of downtown office employees reside in the City. Using this estimate the proposed project would create a demand for about 259 households in the City calculated as follows: approximately 291,000 gross square feet of office space 250 square feet per employee = 1,164 employees x 40 percent (those who would reside in San Francisco) = 466 employees 1.8[2] (av. no. of employed persons per downtown San Francisco household) = 259 dwelling units.[3]

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[1]Pacific III Final EIR, EE 80.315, Certified 2/26,81; Five Fremont Center Final EIR, EE 80.268, Certified 12 March 1981; 101 Montgomery Street Final EIR, EE 80.26, Certified 7 May 1981.

[2]Ibid.

[3]Ibid.

Table 10c indicates the direct housing impacts of the project on the 4 areas within the region, as well as the cumulative impacts of downtown office development. For San Francisco the projected housing demand exceeds projected growth by a factor of nearly 3. The overall jobs/housing imbalance in San Francisco, which is the ratio of the number of jobs to the number of housing units, is estimated to be about 1.65 and ABAG projects an increase to 1.95 by the year 2000.[1]

To the extent that the jobs/housing imbalance tends to pressure housing costs upward, low income persons could be displaced from San Francisco. This effect would be reduced if low income residents obtain jobs in downtown office buildings.

If the number of secondary employed workers per household is also assumed to be 1.8, the secondary employment generated by the project would create demand for an additional 659 housing units throughout the Bay Area.

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[1]Association of Bay Area Governments, Population Employment Housing Projection 1948-2000, Projection 79, pages II-7, 10.

TABLE 10 b

MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO
as of NOVEMBER 1, 1981 in gross square feet

Year	Ttl.Gross Sq. Ft. Cmpltd.	5-Year Total	5-Year Annual Average	Cumulative Total All Office Blds.	All Downtown Office Buildings
Pre-1960		(Net)(3)	(Net)(3)	28,145,000(1)	24,175,000(2)
1960	1,183,000				
1961	270,000				
1962	---				
1963	---				
1964	1,413,000				
		2,866,000	573,200		
1960-1964		(2,580,000)	(516,000)	30,725,000	26,754,000(3)
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
		8,379,000	1,675,800		
1965-1969		(7,541,000)	(1,508,000)	38,266,000	34,295,000
1970	1,853,000				
1971	---				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
		8,615,000	1,723,000		
1970-1974		(7,753,000)	(1,550,000)	46,019,000	42,048,000
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	---				
1979	2,532,000				
		8,157,000	1,631,400		
1975-1979		(7,341,000)	(1,468,000)	53,360,000	49,389,000
1980	1,284,000				
1981/82	3,138,000			57,340,000	53,369,000
Under Construction 83/84	5,600,000	10,022,000	2,004,000		
1980-1984		(9,020,000)	(1,804,000)	62,380,000	58,409,000
Approved Projects	3,113,000			65,182,000	61,211,000

Source: Department of City Planning records

(1) Source: S.F. Downtown Zoning Study - Working Paper No.1, January 1966, Appendix, Table 1, Part 1. For pre 1965, includes the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes 1/3 of mixed use retail/office. For post 1964, includes the entire city.

(2) Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the 1/66 report. For post 1964, the entire area east of Franklin is included.

(3) Net equals 90% of (gross). Net new space is added at an increase factor of 90%, since is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.

TABLE 10c
PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT
ON REGIONAL HOUSING MARKETS

Housing Market	Residency of San Francisco Office Employees[1]	Housing Units Demanded[2]	Household Cumulative Demand 1979-1985[3]	Net Housing Stock Growth 1980-1985[4]	Project Demand as % of Growth 1980-1985
San Francisco	40%	260	17,200	5000-6500	4.0 to 5.2
North Bay	12%	80	6,200	30,700-37,500	0.2 to 0.3
Penninsula	18%	120	8,800	57,500-70,300	0.2 to 0.2
East Bay	30%	200	16,000	47,000-57,400	0.3 to 0.4
TOTAL	100%	660	48,200	140,200-171,700	0.4 to 0.5

[1]Based on adjusted trip generation data, page 58 of the present study.

[2]Project workforce of 1,200 and a ratio of 1.8 workers per household.

[3]Based on projected San Francisco housing demand created by downtown office development in Sedway/Cooke, Downtown San Francisco Conservation and Planning Program, Phase I, October, 1979 p. 47, 48.

[4]Based on straight-line projections of rates of building permit activity from 1975 to 1979 reflected in ABAG, Housing Activity Report, No. 3, May 1981.

TABLE 10d

Estimated Number of Office Worker Households Residing Outside San Francisco Able to Afford Average Priced Housing and Rental Units for the Spear and Main Office Building

		Average Housing Price	Monthly[2] Housing Cost	Total Employees	Percent Able to afford[3] Monthly Cost	Number Able to afford Monthly Cost
East Bay		$115,025[1]	$1,160	360	23%	83
Rental:[4]	Studio		--		--	--
	One-bedroom		277		100	360
	2-bedroom		320		100	360
	3-bedroom		417		79	284
North Bay		154,457[1]	1,560	144	16	23
Rental:[5]	Studio		256		100	144
	One-bedroom		386		82	118
	2-bedroom		479		74	84
	3-bedroom		654		62	89
Peninsula		160,103[1]	1,620	216	14	30
Rental:[6]	Studio		350		100	216
	One-bedroom		450		76	164
	2-bedroom		550		69	149
	3-bedroom		750		53	114

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[1] Real Estate Research Council of Northern California. Real Estate Report, April 1981, p. 4

[2] Estimate of purchase cost for homes assumes 20% downpayment with a 30-year mortgage at a fixed interest rate of 15%.

[3] The table assumes that all employees are part of households and does not reflect availability of housing, just the affordability. Households are assumed to spend 30% of income on housing.

[4] Average rental rates in the cities of Hayward and Pittsburg provided by Mark Miller, Rent Review Officer, City of Hayward, Jan. 11, 1982; and Ted Spagopulos, Housing Manager, Pittsburg Housing Authority, Jan. 12, 1982.

[5] Average rental rates of Napa, Marin and Sonoma counties obtained from Joyce Trentoste, Napa Housing Authority, Jan. 6, 1982; Tina Vera, Planner, Sonoma Housing Authority, Jan. 12, 1982; EIP survey of published rental rates in Marin County.

[6] San Mateo County rates provided by Marty Boat, Urban Planning Economist, San Mateo County, Jan. 6, 1982.

Objective 5 of the Residence element of the San Francisco Comprehensive Plan, Maximize Housing Choice,[1] contains a number of policies concerning housing opportunities suitable for persons with special housing needs and of varied lifestyles.[2]

In the discussion under Policy 6, it is noted that: "The City should develop and use incentives to encourage private construction of new units and rehabilitation of existing units suitable for occupancy by the households described in this policy."[3]

The proposed project would create an incremental demand for housing in the City as noted previously. It is also the cumulative construction of a number of downtown office buildings that generates cumulative demand for housing in the City.

The project would require no new construction or extension of utility systems and would occur in an already developed downtown urban setting. It would therefore not require any infrastructural improvements that would open or intensify development opportunities that do not already exist.

The project would continue the trend of intensifying office uses in the downtown, specifically south of Market Street. Together with other new office development near the site, it could stimulate further office growth in the immediate vicinity, on lots now used for parking or in low-rise structures containing business services (such as warehousing). Employee purchasing power could stimulate employee-oriented retail activity in the site vicinity.

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[1]City and County of San Francisco, Department of City Planning, The Comprehensive Plan, Residence, adopted by Resolution 7417 of the San Francisco City Planning Commission, 11 December 1975; page 18.

[2]Ibid.

[3]Ibid, page 20.

CHAPTER IV

MITIGATION

A. TRANSPORTATION

Although the proposed project would add about 2%± to usage of the transportation system, the cumulative trip generation of other committed downtown development would cause impacts on transportation systems. Although it is beyond the ability of any one development to solve the problems of downtown traffic and transit congestion and parking resources, individual developments can pursue certain mitigation measures privately and eventually participate collectively in a large-scale program to improve the downtown transportation system. The City has recognized the potential role of new development in alleviating transportation system impacts and has suggested some basic mitigation strategies.[1] These are included herein as the first 5 transportation mitigation measures. The following mitigation measures are accepted by the project sponsor.

1. The project sponsor would contribute to a fund for maintaining and augmenting transportation service, in an amount proportionate to the demand created by the project, through an equitable funding mechanism, if successfully implemented by the City, such as an assessment district which would meet the peak demand generated by cumulative office development in the downtown area.

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[1]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, June 1980 (revised October 1980).

● 2. The project sponsor would employ a transportation broker responsible for coordinating, implementing and monitoring programs among tenants and employees to encourage transit use and ride-sharing, including on-site sale of BART tickets and Muni passes and employer subsidized transit passes, establishment of an employee carpool/vanpool system in cooperation with RIDES for Bay Area Commuters or other such enterprises.

3. The project sponsor would, in consultation with the Department of City Planning, request tenant firms to implement a flexible time system for employee working hours. A portion of on-site parking (about 10 spaces) would be made available for carpools and vanpools to aid in reducing peaks of congestion in the transportation system.

4. Within a year from completion of the project, the project sponsor would conduct a survey in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants, and actual pick-up and drop-off areas for carpoolers and vanpoolers. This survey would be made available to the Department of City Planning. Alternatively, at the request of the Department of City Planning, the project sponsor would provide an equitable in-lieu contribution for an overall survey of the downtown area to be conducted by the City.

● 5. The project sponsor would participate in any future area-wide study of current parking conditions and future needs. If new short-term or peripheral parking is appropriate in the downtown area, the project sponsor would participate in the equitable funding of such facilities through a special assessment district according to criteria determined by the study.

● 6. Bicycle parking would be provided on the basement level of the project within the parking garage.

For safety, a buzzer would be installed to signal to bicyclists when a vehicle would be entering the ramp leading to/from the basement garage.

7. The project sponsor would ensure that safe and convenient pedestrian access be maintained throughout the construction period on designated walkways around the project site. To the extent possible, construction equipment and trucks would be parked on the project site. The delivery of equipment, materials, etc., would be restricted during the peak traffic flow periods (7:30-8:30 a.m. and 4:30-5:30 p.m.) and such deliveries would adhere to any truck routing restrictions designated by the City.

8. For pedestrian safety, the project sponsor proposes a bell or buzzer which would sound when vehicles leave the site at Main Street. A single curb cut, in lieu of the 2 curb cuts proposed, to be shared by autos and trucks has been rejected by the project sponsor due to potential circulation conflicts between delivery trucks and automobiles.

9. To facilitate pedestrian movement across Main Street, sidewalk expansion and signal modifications would be made at the Mission/Main Street intersection as a part of the Mission and Main Street project (see Transportation Impacts, page 55). Pedestrian bridges at elevated levels between buildings on the project block or crossing local streets have not been proposed for construction at the time of preparing this EIR.

- The following mitigation measures have been rejected by the project sponsor but could be required as conditions of project approval:

- 10. The project sponsor or future employers of the tenants in the project could provide monthly local and regional transit

passes to all employees to reduce vehicle trips and provide on-going revenue to transit operators.

- 11. All on-site parking could be eliminated or all long-term parking could be prohibited. Tenant parking is proposed by the project sponsor because it is considered necessary to meet the minimum needs of the tenants expected to lease office space. Short-term parking on the project site is also rejected by the project sponsor.

- A proposal to eliminate all on-site parking has been rejected by the project sponsor. Tenant parking (35 spaces) is proposed by the project sponsor because it is considered necessary to meet the minimum needs of the tenants expected to lease office space.

- The following mitigation measure could be implemented by the City:

- 12. The traffic code would be amended to make it illegal to enter an intersection until there is clearance outside of the intersection.

B. AIR QUALITY

The measures discussed in Chapter IV.A. Transportation Mitigation, page 105, would mitigate air quality impacts. These measures would include car-pooling, van-pooling, and staggered work hours.

An effective watering program (complete coverage twice daily) can reduce construction dust emissions by about 50%; the project sponsor would require the contractor to implement a twice daily watering program, which would reduce the likelihood of airborne construction dust and particulates exceeding State and Federal standards.

C. NOISE

Compatibility With the Existing Noise Environment

In accordance with the suggestions in the Transportation Noise Element of the Comprehensive Plan of the City and County of San Francisco, a detailed noise analysis of the noise reduction requirements of the proposed building would be made and needed noise insulation features included in the design.

To mitigate piledriving noise impacts, San Francisco in the past has issued special permits regulating the hours in which piledriving may take place. The project sponsor has agreed to request a special permit from the San Francisco Department of Public Works limiting piledriving to between 1 P.M. and 9 P.M.

In addition to restricting the hours of operation, the City has employed another mitigation measure which has minimized piledriving noise impacts: predrilling the pile holes to minimize

the depth through which the piles would have to be driven. This minimizes the number of flows per pile and therefore the number of noise-generating impacts, and also keeps the pile hammer closer to the ground where shielding due to adjacent buildings is more effective. However, the project's architects specify that the piles that would be used for the project would be "friction" piles (support of the piles would be provided by the sand and alluvium material in contact with the piles), and predrilling pile holes would allow the piles to sink. Therefore, predrilling pile holes would not be provided as a noise mitigation measure.[1]

A wood construction barrier around the project site would be installed and would be effective in mitigating noise levels by up to 15 dBA at the lower floors of nearby buildings. Upper floors would not be shielded by the construction barrier.

D. VISUAL QUALITY AND URBAN DESIGN

A lower building of 4 to 6 floors would avoid obstructing views from the upper floors of adjacent buildings. For economic reasons (to optimize the rate of return of leasable space), the project sponsor is not proposing to construct a structure of lower height containing fewer gross square feet.

In addition to textured surface paving, visual interest to pedestrians would be improved through the use of street trees in front of the building along Main Street and along the interior pedestrian walkways of the block adjacent to the building. Street trees would also serve to improve the scale relationship between the pedestrian environment and mass of the building. Continuity in a street tree theme on the block would be ensured if trees of the project along Main Street were to be of the same species previously installed on Spear and Howard Streets and that would be used for the 101 Mission Building. The project sponsor would see to it that street trees will be coordinated with street tree

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[1]Jorge de Quesada, Inc., Architects, telephone communication to Cathal O'Doherty, project architect, 21 October 1981.

plantings that may be proposed as part of the proposed 115-135 Main Street Building and proposed Main and Mission Street Building. This would be subject to approval by the City as it is required that street trees be located in such a way as to minimize interference with pedestrian traffic.

E. SOILS AND SEISMICITY

1. Soils

Further geotechnical engineering investigations including test borings would be done to determine soil characteristics and thickness; to recommend foundation pile type, pile-bearing length and pile-tip elevation; to predict pile downdrag due to fills overlying compressible soils, expected settlement and possible differential settlement; and to determine if dewatering would be necessary and safe relative to adjacent structures. Results and conclusions of these technical studies would be incorporated into the structural design plans for the proposed building.

Streets would be swept to prevent siltation of storm drains. Soils and demolition debris would be contained on-site for later transportation to dumps.

2. Seismicity

The structure would be designed to meet the seismic design standards of the Uniform Building Code (UBC) and the Structural Engineers Association of California (SEAOC). The latter design standards relate structural design to the maximum probable earthquake in the region, an 8.3 Richter magnitude event along the San Andreas Fault. The elasticity of the structure would be designed according to SEAOC recommended maximum allowable sway. Computer analysis of the structural frame would be performed in order to design the seismic constraint of the structural frame. Such a design

approach would help to minimize damage in a moderate earthquake (magnitude 5.0 to 6.0), and prevent collapse under the maximum probable earthquake.

To reduce seismic hazard, nonstructural elements such as hanging light fixtures, hung ceilings, wall partitions, bookcases and mechanical equipment would be firmly attached to prevent them from falling during an earthquake, as required by the San Francisco Building Code. Emergency procedures would be posted.

An evacuation and emergency response plan would be developed by project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to insure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final occupancy permits.

F. HISTORICAL RESOURCES

If historical resources are discovered during construction of the proposed project, the contractor would stop work in the area of the find and select a professional archaeologist to permit professional evaluation of the find and determine the appropriate subsequent steps to be taken. The Office of Environmental Review, the President of the Landmarks Preservation Advisory Board, the Director of the Maritime Museum in San Francisco, and the Regional Archaeological Site Survey Office at Cabrillo College at Aptos, California would be notified. Any artifacts found would become the property of the project sponsor. All recommendations would be sent to the State Office of Historic Preservation. Construction that may be damaging to historical resources discovered would be suspended for a maximum of 4 weeks to permit inspection, recommendation and retrieval, if judged appropriate.

G. COMMUNITY SERVICES

1. Police

Internal security measures such as a security guard during regular business hours and late evenings, and 24-hour illumination of the ground floor lobby would be provided in the building to assure safety.

2. Fire

Self-contained fire and life-safety systems consisting of sprinklers, alarms and smoke removal systems would be provided as required by the San Francisco Building Code.

3. Water and Sewer

All street surfaces would be restored to their original condition after project water and sewer distribution lines are converted to existing mains. This would be done to the satisfaction to the Department of Public Works.

4. Solid Waste

A solid waste compactor would be provided for the project. A decision on the size and location of the compactor is yet to be made by architects for the project sponsor. Litter receptacles for pedestrians would be provided in sidewalk areas in locations to be determined by architects for the project sponsor.

H. ENERGY

The project sponsor would incorporate the features described in the energy impact section (page 91) in the building. These represent design factors that would conserve energy consumption. In addition, other design features could be incorporated into the structure that would further reduce energy consumption. Examples that are under consideration include:

- Dual-level lighting controls to permit lighting levels to be reduced by 50% during periods when higher illumination levels are not required.
- Provision of optimum thickness of insulation for duct-work, piping and equipment.
- Devices in washrooms to limit water outlet temperatures to 110 degrees Fahrenheit.

It is not possible at this time to quantify the actual reduction in energy consumption the above mitigation measures would achieve. The project sponsor has not determined that these features would be incorporated in the building, but would investigate the feasibility of using them in view of the requirements of Title 24. Within one year after the building would be fully occupied, the project sponsor would provide the Department of City Planning natural gas and electricity consumption figures for the building's operation. If energy consumption exceeds the requirements of Title 24, the project sponsor would have a PG&E certified audit performed and additional energy conservation measures would be implemented as recommended.

The building would be heated and cooled by mechanical equipment. Therefore, fixed (non-operable) windows are proposed for the building. The use of operable windows has been rejected by the project's architects because operable windows would increase air conditioning loads on warm days and increase heating loads on cool days, creating greater demands on energy use within the building.

I. HOUSING

The project sponsor recognizes the cumulative demand for housing in San Francisco and the Bay Area that continued high-rise office construction creates.

According to the formula contained in the Memorandum, "Housing Requirement for Office Development in San Francisco" (Dean Macris, Director, Department of City Planning, July 1, 1981), the project would generate a demand for about 259 housing units in San Francisco. The Planning Commission could require the project sponsor to satisfy the housing demand by development of on- or off-site housing, or by other means such as contributions to a non-profit housing development corporation.

Measures Accepted by the Project Sponsor

The project sponsor would cause to provide 259 housing units in San Francisco off the project site.

Measures Rejected by the Projected Sponsor

The project sponsor would not provide housing on the project site.

V. UNAVOIDABLE ADVERSE IMPACTS

1. Transportation

Cumulatively, if auto commuting increases at the same rate as transit travel, the total peak hour auto travel in the downtown area could increase by approximately 30% in 1983 without the proposed project. The proposed project would represent approximately 4% of this increase. In addition to a degradation in the quality of traffic flow on surface streets, the freeways and freeway ramps will be critical links in the overall roadway network. With these facilities currently operating under congested conditions during peak hours, the traffic increases generated by cumulative downtown development will add to this congestion with the likely result that travel delays will be extended.

- The effect of cumulative downtown development would be to raise patronage beyond the capacity of Golden Gate Transit. Of the 38 Muni lines serving the site, 21 lines would be over capacity as a result of cumulative development. Lesser impacts would be experienced by BART, AC Transit, SamTrans and Southern Pacific.
- The project would generate demand for approximately 340 long-term parking spaces and 145 short-term parking spaces (and would displace 110 spaces in an existing lot on the project site). The majority of the demand would need to be accommodated at other locations in the area, where current parking occupancy rates are about 90%.
- Downtown development projected for the next 3 years would add to the parking demand in the downtown area, increasing occupancy to 100+%. Although the proposed project would account for only a small portion of this increase in parking

demand, there would be cumulative demand. It is likely that parking would shift farther from downtown with increased demand south of Folsom Street and beyond to the Embarcadero.

2. Noise

During the use of impact wrenches for building framing directly outside the adjacent Howard Street buildings, noise levels could reach 100 dBA outside and about 75 dBA inside. This activity would be sporadic but workers in offices nearest the noise source would not be able to use the telephone or carry on a conversation when the impact wrenches would be in use.

3. Visual Quality

At increasing heights in adjacent buildings, views outward would be blocked up to the building's 19th floor level; the degree of view blockage would vary with respect to elevation and observer location in relation to the project.

4. Historical Resources

It is not feasible to rule out the possibility of encountering historical or archaeological resources during construction of the new building.

5. Energy

Assuming a potential 50-year lifetime for the building, the estimated lifetime energy cost (including construction, operation, transportation and removal) would be about 4 trillion BTU. This is equivalent to approximately 740,000 barrels of crude oil.

6. Air Quality

During construction, airborne dust and dust fall downwind from the site would be increased. Although no measurable effect on regional photochemical oxidant concentrations owuld be anticipated due to increases in vehicular traffic from the project, photochemical oxidants are expected to be a persistent problem in the future in the Bay Area. Reductions in hydrocarbons and oxides of nitrogen emissions will be necessary to attain the federal standard for photochemical oxidant (ozone) in the region.[1]

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[1]Association of Bay Area Governments, 1979 Bay Area Air Quality Plan, January 1979.

VI. ALTERNATIVES TO THE PROPOSED PROJECT

A. NO-PROJECT ALTERNATIVE

If the proposed project were not constructed, the site would be returned to use as a parking lot for an unspecified period of time after construction completion of the adjacent 150 Spear Street office building (EE78.413). With the retention of the site in its current use, none of the identified impacts associated with the proposed project would be exerted on the downtown area.

The no-project alternative would hold open future options for the land to be developed under other development scenarios (see VI.B. below). Deferment of development could also give time for existing zoning codes to be amended affecting the ultimate build-out potential of the site.

B. ALTERNATIVE SITE USES

Under the C-3-0 zoning, other possible site uses include dwellings, hotels, business services, and sales (see Chapter I.C., Zoning, page 5).

1. Retail Sales and Hotel Use

Retail sales use of the site in a building comparable in size to the proposed project would generate trips at a higher rate on a daily and peak hour basis than office space and it would be likely that larger impacts on traffic, transit, pedestrian flow, and noise would occur for such a project. Hotel use would generate daily trips on a higher daily basis and fewer peak hour trips than the project as

proposed. However, because the site is located at the fringe of the Central Business District, for economic reasons it is unlikely that the site would be intensively developed for retail sales or hotel use purposes.

2. Wholesaling Use

A wholesaling operation would be a less intensive use of the site than the proposed project, and it would have less impact on automobile traffic, transit and pedestrians. Truck traffic, however, would increase. Tax revenues would likely be less than for the proposed project, as would employment and less municipal expenditures would be required while cumulative, indirect housing impacts would be reduced. Some blue-collar employment would directly be created by wholesaling use of the site. The project sponsor believes that the land is too expensive to permit wholesaling use on the project site, that wholesaling would not generate enough revenues to offset the cost of the land.

3. Housing/Commercial/Office Use

Under existing C-3-0 zoning, the maximum number of residential units permitted on the site would be about 202.[1] The number of dwelling units to be filled in San Francisco by employees who would work in the building as proposed is computed to be 259 (see Section III.K., Growth Inducements, on page 102). However, as a mixed housing/commercial/and office use project, the gross square footage of the structure could not be greater than the project as proposed due to the 240-foot height limit. Therefore, assuming a mixed use building of equal size to the project as proposed, the 15,500 gross square feet of ground floor and commercial space (net commercial space would be 7,460 square feet), would allow for 290,950 gross square feet of office and housing space. Allowing for 140,000 gross square feet of office

[1]City and County of San Francisco, Planning Code, Section 215. Calculated at a site area of 25,208 S.F. ÷ 125 S.F./dwelling unit = 202 units.

space would generate a demand for 124 dwelling units which could be acommodated on the site at 1,217 gross square feet average each. Such a mixed use project would be compatible with potential future residential uses adjacent to the Rincon Annex post office planned by the Redevelopment Agency at the northeast corner of the intesection of Howard and Spear Streets. Development of the project site for residential use only would yield 202 units at an average size of 1,517 gross square feet each.[1]

Trip generation due to residential use of the site would likely be lower than the project as proposed because fewer individuals would enter and leave the site on a daily basis. This would vary, depending on the size of the residential development and number of dwelling units constructed. Peak-hour trips would be outbound in the morning and inbound in the evening, in reverse to those for the proposed project and for the Central Business District in general. Traffic impacts would be expected to be less, while pedestrian and transit impacts would be either greater or less, depending on where the majority of residents would travel to work. Parking demands for residential use would, again, vary depending upon the size of the project. Parking demands could increase in other areas containing food stores and convenience shopping facilities if a residential structure were constructed on the project site, given the current absence of residential neighborhood amenities such as food stores, entertainment facilities, shops and restaurants.

Revenues generated to the City from residential use of the site could be less than those accruing from office use as no payroll tax would be levied (except for personnel providing services to the residential units). Property tax may be higher than for the proposed project depending on the size of the residential development and the relative rates of ownership turnover. Utility users

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[1]Residential use of the building would not yield an exterior building appearance significantly different from that which is currently proposed (see Figures 4 and 7, pages 7 and 10, and Figures 26, 27 and 28, pages 124, 125 and 126.

tax would also be greater than for the proposed project due to the increased consumption of water, gas and electricity (telephone use may be more for an office building). Demands on municipal services would be greater than for the proposed project, particularly recreational and police protection. Indirect revenues related to residents spending money for goods and services (sales tax) and non-local subventions on a per capita basis would be greater for residential use than for the proposed project.

The project sponsor notes that 1:1 parking for the residential portion of a housing/commercial/office project would be required to secure construction and residential financing, which in turn would require 4 floors of underground parking at the ratio of about 30 parking spaces per floor.[1] The project sponsor feels that the cost of constructing such underground parking would cause the cost of housing to rise beyond the ability of prospective buyers to purchase the residential units. Presence of groundwater in the area at 8 to 10 feet below the ground surface indicates that the project site would probably require dewatering if 4 levels of underground parking were to be provided.

If one parking space were provided for every 4 dwelling units, one basement level would be required. At a construction cost of about $75 per square foot of space, the basement level would require about $1,200,000 or $9,700 per unit. One basement parking space for each unit would cost about $38,800.

The project sponsor notes that an additional bank of elevators would be required to serve the housing, creating a total of 2 elevator banks (1 for office use and 1 for the housing), reducing interior square footages and increasing housing and office leasing costs, ultimately reducing sales and leasing potential.

Possible residential use of the site is not being considered by the project sponsor because of the above cost factors and

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[1]Current zoning in the C-3 districts requires one off-street parking space for every 4 dwelling units.

also due to the uncertainty of marketing residential units in a business district where there are currently no nearby dwellings or neighborhood amenities such as food stores, entertainment facilities, and restaurants available for evening meals. Developing the site for residential purposes would help to ameliorate the housing demand in San Francisco (the extent would depend on the type of housing available, i.e., whether it would be intended for low and moderate income people, a mix, or luxury apartment condominiums).

4. Parking Garage

The site could be developed as a commercial parking garage, subject to approval by the City Planning Commission as a conditional use. The Transportation Element of the San Francisco Comprehensive Plan shows the project site to be in a parking belt, defined as:

> "areas appropriate for short-term parking facilities to replace spaces removed from the core area; located and designed to intercept vehicles entering downtown from major thoroughfares before they reach the downtown core automobile control area."[1]

If the site were developed as a commercial parking garage, total employee trip generation would be less than the project as proposed and impacts on transit would be less. However, the number of vehicular trips ending and originating at the site would be greater, in turn increasing impacts on traffic conditions, the noise environment and air quality in the immediately adjacent area.

The project sponsor notes that land costs are too high to construct a structure for the sole purpose of parking vehicles on the project site.

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[1]City and County of San Francisco, Department of City Planning, The Comprehensive Plan, Transportation, adopted by Resolution 6834 of the San Francisco City Planning Commission, 27 April 1982; pages 24-25.

C. DEVELOPMENT WITHOUT INTERIM BONUS CONTROLS

Interim bonus controls impose limitations upon the award of bonus provisions which provide for an increase in floor area ratios (FAR) within C-3 districts for all projects except those "grandfathered" by action of the Board of Supervisors (see Section I.C. Zoning, page 5). The City Planning Commission recently initiated changes in the text of the Interim Bonus Control Ordinance, which expired on 1 July 1981. One amendment to the text temporarily extends the controls while a second amendment proposes extending the controls for a longer period of time to 1 July 1983, pending completion of a Downtown EIR.[1]

In the absence of any specific proposed revisions to the Planning Code at this time, this alternative examines development on the project site assuming there were no interim bonus controls, and the bonuses allowed in the Planning Code, Section 126, were available; (the project as proposed claims no bonuses).

Although the project's proposed FAR is 12.2:1, the basic FAR for the site is 14:1, allowing development of 352,912 gross square feet. The project design incorporates 2 features that appear to be eligible for bonus award: multiple building entrances and sidewalk widening. Under bonus provisions, an allocation of 10,000 square feet and about 32,000 square feet, for a total area of approximately 395,000 gross square feet, would be permitted, or about 88,500 gross square feet above the 306,450 gross square feet proposed. Height provisions of the Planning Code confine the office building envelope to the height proposed for the project. The additional area could then

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[1]A number of alternative planning criteria to limit downtown development have been proposed. Their impacts will be evaluated in terms of the environmental review process. After the Downtown EIR has been completed it is anticipated that specific revisions to the Planning Code will be proposed.

be incorporated by adding additional floors to proposed open space or seeking conditional use permit approval for specific exemption from the bulk limits.[1]

If a larger building were constructed on the site, the impacts identified for the proposed project would be proportionately more, particularly in the areas of traffic, transit, pedestrian flow and energy consumption.

D. ALTERNATIVE DESIGNS

Alternative building designs prepared by the project architects included schematic design schemes generally addressing details in the exterior shape of the building, window placement, exterior building materials and the location of pedestrian access points (see Figures 26, 27 and 28, pages 124, 125 and 126). In the opinion of the project architects and sponsor, the selected design proposed represents a combination of the above features that are most aesthetically appropriate and the arrangement of internal building spaces and use functions of greatest efficiency. The alternative of providing a pavilion containing retail space and a roof garden extending from the building's east face toward Spear Street was previously considered by the project sponsor, but was rejected due to the uncertainty of retail sales of a magnitude greater than currently proposed being successful over the long term. Previously, rounded building corners were proposed. The rounded building corners were rejected to establish architectural harmony between the proposed building and adjacent structures. In addition, the building's roofline steps down toward the building corners to provide greater definition of the roofline. The stepped down

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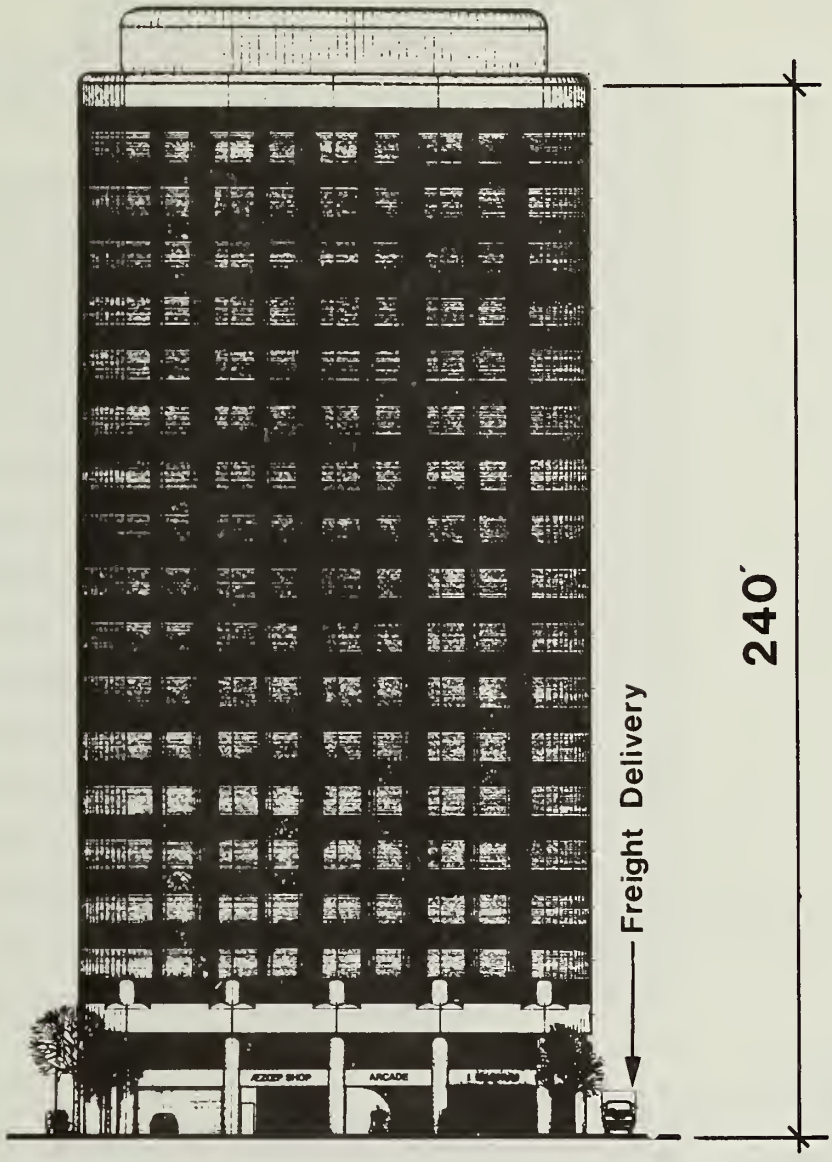
[1]Section 271 of the Planning Code provides that special exception to bulk limits may be awarded where certain criteria are met. Such criteria are related to appearance, design, choice of materials, compatibility with the surrounding area, silhouette, and preservation or enhancement of the pedestrian environment.

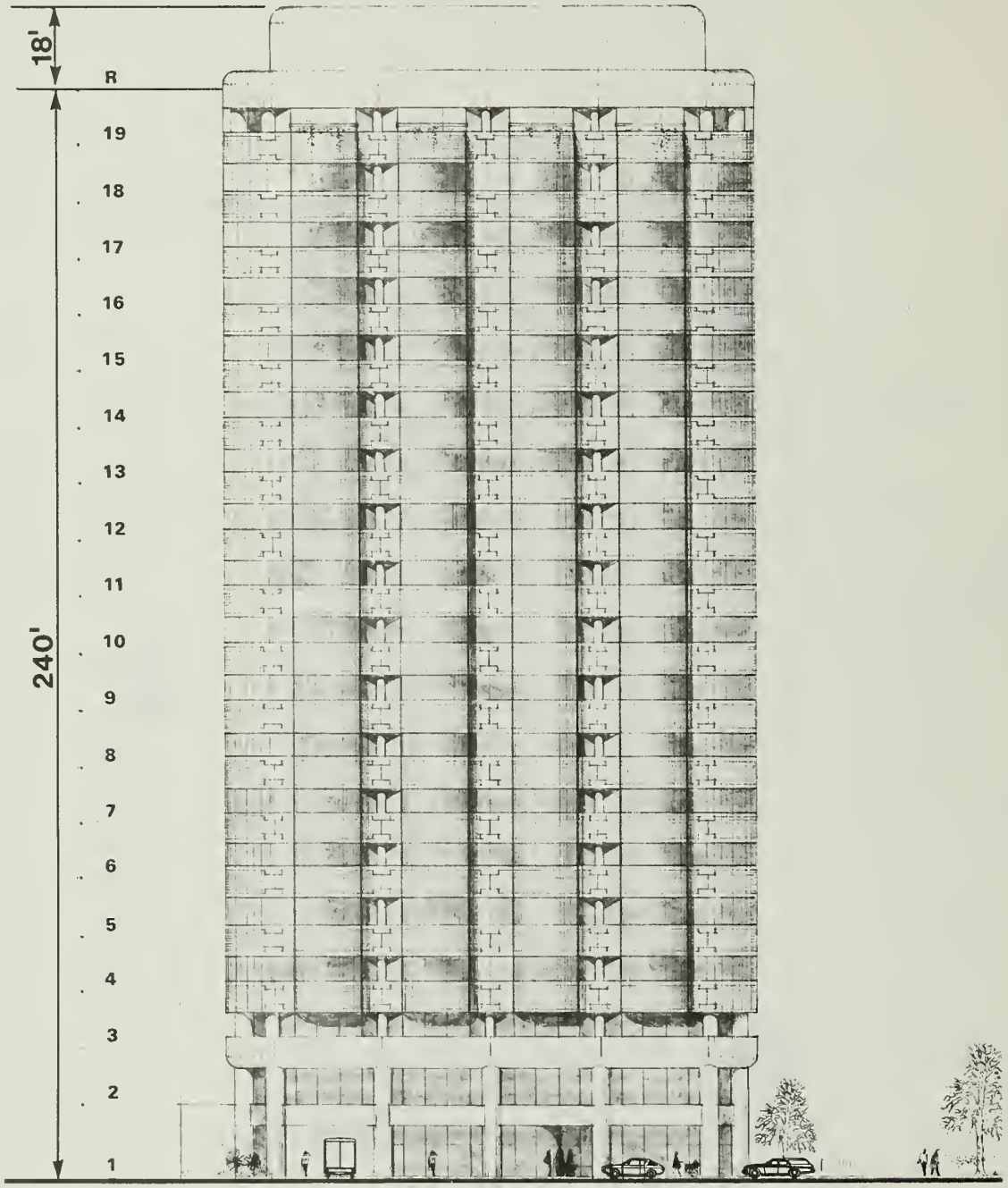


Alternative Design A- West Elevation

0 10 20 40
Scale Feet

Source: Jorge De Quesada, Inc., Architects

Figure No. 26



Alternative Design B
West Elevation

0 20 40 80
Scale Feet

Source: Jorge De Quesada, Inc., Architects

Figure No. 27

Alternative Design C- South Elevation

0 10 20 40
Scale Feet

Source: Jorge De Quesada, Inc., Architects

Figure No. 28

roofline is reflected in the configuration of the spandrels at the building corners (Figure 4, page 7), and was not a consideration in early design work on the building.

The proposed 115 Main Street building would join the Main and Spear building at the north property line at the ground floor. The 2 structures would be separated by 22½ feet of space at all floors above the ground floor. The alternative of spacing the buildings 15 feet apart above the ground floor would permit less daylight between the structures because of increased shadowing. Reducing the spacing of the structures to 5 feet would allow greater visual contact between occupants of the 2 buildings, increase windspeeds between the structures and provide increased shadowing than the project as proposed. Pedestrian comfort due to wind at the ground level would not be affected by more closely spaced building alternatives because the structures would be joined at the ground level as noted. A noticeable change in energy consumption would not be expected to occur under alternative building spacings.

E. GUIDING DOWNTOWN DEVELOPMENT ALTERNATIVE

Guiding Downtown Development[1] (GDD) is a report recently prepared by the Department of City Planning containing a series of regulatory proposals for managing development in downtown San Francisco. The proposals affect the size, design, and location of major buildings. They also deal with the effect new development has on housing, transportation, and open space, on architecturally significant older buildings, and on the general environment and livability of the central business district.

The proposals will undergo an extended period of public review and comment as well as environmental impact assessment. The proposals will then be modified as appears appropriate in

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[1]City and County of San Francisco, Department of City Planning, Guiding Downtown Development, May 1981. The document is commonly referred to as "Approaches III."

light of that review and assessment. Formal public hearings on proposed Master Plan and Planning Code changes before the City Planning Commission are anticipated in late spring of 1982.

On 4 June 1981, the City Planning Commission adopted Resolution 8982 which requires that any project for which a Draft EIR had not been advertised prior to 4 June 1981 include an alternative for environmental evaluation a building proposal that would comply with the proposed controls contained in Guiding Downtown Development (GDD). Accordingly, a comparison is made on the following pages between the project as proposed and the controls that would pertain to the project with the resulting GDD-induced change identified.

G.D.D. PROPOSALS	SPEAR AND MAIN ST. PROJECT PROPOSALS	G.D.D. INDUCED CHANGE
A. Building Size, Design and Appearance	A.	A.
(1) Maximum Floor Area Ratio (FAR) for C-3-0 District with housing, development rights transfer, restoration and retail space not to exceed 17:1. Maximum base FAR to be 12:1.	(1) 306,500 gross sq. ft. ÷ Site Area of 25,208 sq. ft. = 12.2:1 FAR (existing allowed FAR is 14:1).	(1) Project would exceed the proposed 12:1 base FAR; however, would be permitted additional .5 FAR for retail use (see item B.1 below), and would be under maximum permitted FAR of 12.5 permitted for the project.
(2) Average floor area per floor should be a maximum of 20,000 square feet.	(2) Average floor would contain 16,129 sq. ft. as proposed. No floor would exceed 20,000 sq. ft.	(2) ---
(3) 1/15 of total floor area above building midpoint above 65 feet to be transferred to lower floors.	(3) Building would be rectangular in plan dimension and would not step inward at upper floors.	(3) 13th through 19th floors reduced by 22,544 sq. ft. Lower coverage at upper floors, reduced building bulk at upper floors.
(4) Maximum average diagonal plan dimension not to exceed 200 feet. Increase in lower floors permitted with decrease in upper floors.	(4) Maximum plan dimension is 168 feet as proposed.	(4) ---
(5) Building height not to exceed 240 feet.	(5) 240 feet building height.	(5) ---
(6) Strengthen Urban Design Standards	(6)	(6)
a. Create interesting street frontages.	a. Base of building visually differentiated from upper floors.	a. ---
b. Conserve traditional street and building relationships.	b. Building would assist in visually defining the alignment of Main Street. Open circulation space would be provided between buildings consistent with existing walkways on the block.	b. ---

G.D.D. PROPOSALS	SPEAR AND MAIN ST. PROJECT PROPOSALS	G.D.D. INDUCED CHANGE
c. New facades to relate to nearby facades.	c. To be determined; other building proposals being prepared.	c. ---
d. Preserve scale, form and building proportions in new construction.	d. Building would relate to the scale and form of existing and proposed highrises in the project area. Building would not relate to lower 2-story structures on the block which are to be removed for new construction.	d. ---
(7) Incorporate art work in new buildings.	(7) No art work proposed.	(7) Would require addition of art work to provide additional visual interest to pedestrians and building occupants.
(8) Provide for the installation of street trees.	(8) Street trees would be provided.	(8) ---
B. Retail Space	B.	B.
(1) Floor area allowance for ground retail uses (maximum 2,000 sq. ft. per establishment).	(1) 7,460 gross sq.ft. of retail space is proposed.	(1) Add 0.5 FAR per G.D.D. Each retail establishment would be up to a maximum at 2,000 gross square feet.
(2) Provide adequate convenience shopping and facilities.	(2) 7,460 gross sq. ft. of retail space is proposed.	(2) ---
(3) Ground floor space on street frontage and pedestrian ways devoted to retail uses.	(3) The noted features are proposed as stated.	(3) ---
(4) Retail space to be limited so as not to compete with the downtown core.	(4) Retail space would serve occupants of the proposed building and adjacent structures.	(4) ---
C. Recreation and Open Space	C.	C.
Provide recreation and open space in C-3-0 District at ratio of 1 sq. ft. for each 25 gross sq. ft. of building floor area.	Open space and pedestrian ways proposed = 11,150 sq. ft.	306,500 gross sq. ft. ÷ 25 = 12,260 sq. ft. of recreation and open space required; (increase of 1,110 sq. ft. open space would be required by G.D.D.).

G.D.D. PROPOSALS	SPEAR AND MAIN ST. PROJECT PROPOSALS	G.D.D. INDUCED CHANGE
D. Transportation and Circulation	D.	D.
(1) Contribute funds for maintaining and augmenting transportation service (Transit Fee and Assessment District).	(1) Committed to by project sponsor.	(1) ---
(2) Employ a transportation broker responsible for encouraging transit use and ride sharing.	(2) Sponsor would encourage transit use and ride sharing.	(2) Employ transportation broker.
(3) Provide a "reasonable number" of bicycle and moped parking spaces.	(3) Bike parking to be provided at ground level external to the building, amount to be determined.	(3) ---
(4) Participate with other developers in studies of providing "intercept" commuter parking facilities and shuttle service to project.	(4) Committed to by project sponsor.	(4) ---
(5) New long-term parking to be located on periphery of downtown; new short-term to be adjacent to core area; no parking in core area without conditional use.	(5) 35 tenant parking spaces to be provided.	(5) Would require conditonal use authorization.
(6) Provide off-street loading at 0.1 space per 10,000 sq. ft. of building area.	(6) Two large truck and 3 delivery van spaces would be provided.	(6) ---
(7) Minimum loading space length to be one at 55 feet, others at 35 feet; maximum curb cut to be 24 feet.	(7) Loading spaces would accommodate 55 ft. truck and 35 ft. truck. Proposed curb cut for truck is 20 feet.	(7) ---
(8) Access to off-street parking or loading should be from minor and non-pedestrian streets in preference to transit preferential streets.	(8) Main Street is not a transit preferential street.	(8) ---
(9) New development to be required to accommodate midblock pedestrian walkways according to a network plan.	(9) Project would provide and accommodate pedestrian walkways.	(9) ---

G.D.D. PROPOSALS	SPEAR AND MAIN ST. PROJECT PROPOSALS	G.D.D. INDUCED CHANGE
E. Housing Housing should be provided either on the project site or elsewhere in the City at a rate of 640 sq.ft. for every 1,000 sq.ft. of office space.	E. Housing is not a part of base proposal.	E. Additional housing on or off-site would be required.
F. Building Preservation Avoid destruction of historical buildings.	F. Site is vacant.	F. ---
G. Cumulative Impact Assessment Sponsors to contribute funds to keep cumulative environmental impact data current over time.	G. To be determined.	G. ---

CHAPTER VII
SUMMARY OF COMMENTS AND RESPONSES

TABLE OF CONTENTS

		Page
A.	LIST OF COMMENTORS	
	1. Persons Commenting at the Public Hearing, 10 December 1981.	137
	2. Persons Commenting in Writing During the Public Comment Period 6 November 1981 through 4 January 1982.	137
B.	SUMMARY OF COMMENTS AND RESPONSES	139
I.	PROJECT DESCRIPTION	139
II.	CUMULATIVE IMPACTS	140
	1. General	140
	2. Construction	143
III.	TRANSPORTATION	146
	1. Transit	148
	A. Setting	148
	B. Impacts	150
	C. Mitigation	163
	2. Parking	164
	A. Setting	164
	B. Impacts	165
	C. Mitigation	169
	3. Traffic	170
	A. Setting	170
	B. Impacts	171

CONTENTS (Continued)

		Page
IV.	ECONOMIC AND FISCAL	176
	1. Employment and Housing	176
	A. Setting	176
	B. Impacts	188
	C. Mitigation	221
	2. Transit	224
	A. Impacts	224
	B. Mitigation	228
V.	LAND USE	229
VI.	VISUAL QUALITY AND SHADOWS	233
VII.	PUBLIC SERVICES	238
	1. Child Care	238
	2. Police	240
	3. Solid Waste	243
VIII.	AIR QUALITY	246
IX.	SEISMICITY	251
X.	ENERGY AND CONSTRUCTION MITIGATION	256
XI.	ALTERNATIVES	259
XII.	STAFF-INITIATED TEXT CHANGES	264

DRAFT COMMENTS AND RESPONSES
SPEAR AND MAIN STREET OFFICE BUILDING

A. LIST OF COMMENTORS

1. Persons Commenting at the Public Hearing, 10 December 1981

Toby Rosenblatt, President, City Planning Commission

Yoshio Nakashima, member, City Planning Commission

Susan Bierman, member, City Planning Commission

Carl Imparato, San Franciscans for Reasonable Growth

Sue Hestor, San Franciscans for Reasonable Growth

Calvin Welch, San Francisco Information Clearinghouse

Kay Patchner, San Francisco Consumer Action

John Elberling, San Franciscans for Reasonable Growth

David Jones, San Franciscans for Reasonable Growth

2. Persons Commenting in Writing During the Public Review Period, 6 November 1981 through 4 January 1982

Michael Visconti
Plan & Project Review
Association of Bay Area Governments
Letter of 9 December 1981

John Elberling
San Franciscans for Reasonable Growth
Letters of 7 and 10 December 1981

Paul H. Hughes
Acting District CEQA Coordinator
Caltrans District 04
Letter of 23 December 1981

Flint Nelson
Director, Public Utilities
Commission, Bureau of
Energy Conservation
Letter of 18 December 1981

Beverly Daniels
for Gary Agid, Chief
Local Project Branch
Regional Programs Division
State of California, Air Resources Board
Letter of 23 December 1981

I. PROJECT DESCRIPTION

COMMENTS

Carl Imparato

"A footnote on page 53 states that the project size has been adjusted downward by 3%. It's unclear to us if the statistics, for example the floor area ratio which are in the project summary and description, whether those statistics reflect that adjustment already. If so, then possibly that should be made clearer, and if they don't reflect the downward adjustment, perhaps those statistics about the amount of office space should be revised."

Chairman Rosenblatt

"The bottom of page 4 should include some mention of the gross and net square feet per floor."

RESPONSE

The square footage and floor area ratio (FAR) calculations shown on page 16 of the EIR do not reflect the 3% downward adjustment of gross floor area subsequent to preparing the Preliminary Draft EIR. Therefore, impacts shown are worst-case conditions and the downward adjustment in square footage has not required changes in the calculation of impacts because they fall within the $\pm$ 10% level of statistical validity of the methods used to predict the impacts.

The following sentence is added after the first sentence in paragraph 3 on page 4 of the EIR:

"The average gross square feet per floor would be about 16,130 square feet, while the average net rentable square feet per floor would be about 14,690 square feet."

The above sentence and the square footages shown on page 4 of the EIR do not reflect the 3% downward adjustment.

II. CUMULATIVE IMPACTS

1. General

COMMENTS

Carl Imparato

"Previous EIRs looked at a base case, which is typically the current setting or the current setting plus 2% a year, something like that. They look at that base case and they look at the base case plus cumulative development plus the proposed project.

"That's supposed to allow us to compare both the project's individual impacts and its incremental contributions to the cumulative growth; to compare both those to the present-day situation. But this Draft EIR in many areas of the analysis looks at only two of the three necessary situations. It looks at a 1983 case where all the projects already approved are in place. And then it looks at the effect of taking this one proposed project onto that development level.

"It does not look at today's base case and as a result we can not gauge what the impacts of cumulative development are, because we can not determine from this Draft EIR what change the so-called cumulative development has caused with regards to today. The amount of development which is called cumulative is far too low. This Draft EIR only looks at the impacts of about 7½ million square feet of projects which have already been approved by you.

"But there are 26 million square feet of office development in the pipeline and when we talk about the impacts of cumulative development, that's probably the number we should be using, because that's the amount of office space which would be built before 1990, if the Commission continues to approve all projects as it has been doing in the past.

"Previous EIRs used for their cumulative impact analysis essentially all of the development that was proposed, approved, or under construction at the time. For example, 315 Howard's Environmental Impact Report, which came out a year and half ago, used 10.2 million square feet,

which were in the pipeline at the time, and that's what should have been done. Since that time, of course, the development pace has accelerated and there is a lot more than 10 million square feet in the pipeline. Cumulative impacts look at everything in the pipeline. We ask in particular that all cumulative impacts discussed in the EIR be revised with these comments in mind, because there is quite a difference between the impact of 26 million square feet and 7½ million square feet.

"The 26 million square feet of office development that we are talking about basically comes from the Mayor's State of City address a few months ago. She quoted 24 million square feet of office construction not including Yerba Buena Office Center projects, or projects which have come up since then or have been completed this year."

RESPONSE

The 26 million square feet of office development referred to in the comment above is derived from Department of City Planning records and includes approved projects, proposed projects and various inquiries the Department had received regarding building sites.[1] This figure is not based only on projects for which applications have been made.

Development approved for construction in the downtown area through October 1981 represents about 8.8 million square feet of new office construction. In addition to the projects approved (through October 1981) in the downtown, a number of other developments have been proposed. Based upon a report prepared by the Department of City Planning,[2] about 9.3 million square feet of downtown office development has been proposed through October 1981 but not yet approved.

The cumulative impacts analysis has been expanded; cumulative impacts on traffic generation, public transit, construction traffic and parking are discussed in Section III, Transportation, pages 146 through 175. The base case considered includes downtown projects approved through October 1981 as listed on page 155. The project as proposed is added to the base case for the analysis of transportation impacts, and cumulative analysis includes the base case (including the project) plus projects proposed through October 1981.

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[1]San Francisco Office of Community Development, Mayor's Office, Bill Witte, telephone communication, 26 January 1982.

[2]Basic data supplied by the San Francisco Department of City Planning and memorandum from Dean Macris, Planning Director to Planning Commission entitled "Alternative Interim Controls on Downtown Development, 18 November 1981.

COMMENT

Carl Imparato

"We question the statement that the project would not require infrastructural improvements. Now, as part of the cumulative growth, which would require an increase in downtown transit service by 50 percent, the project definitely would be responsible for an incremental portion of major infrastructural expansion.

"We also request discussion on the relationship between the viability of blue collar land uses in the South of Market and the impacts of cumulative office growth on land value speculation, site competition and traffic congestion."

RESPONSE

The project in itself would not require additions to or improvements in existing utility systems. Cumulative impacts on transit service as a result of the proposed project and other approved downtown projects is acknowledged on page 58 of the EIR. The project would be responsible for an incremental portion of any future infrastructural expansion resulting from cumulative growth in the downtown area as noted on pages 89-90 of the EIR.

The general loss of blue collar employment in the City is related to overall cumulative development trends, which replace blue collar positions with white collar positions. However, new office buildings also create blue collar jobs both in and out of the City. For example, construction workers, delivery truck drivers, telephone installers, security personnel, maintenance people, and persons who manufacture and supply paper and other office products would be associated with the project.

As noted on page 97 of the EIR, about 360 person-years of construction labor would be generated as a result of constructing the project.

Growth inducements are noted on pages 102 through 104 of the EIR. Stimulating growth would include stimulating increases in land values. Increased land values reinforce development trends toward high-rise office buildings (see Section IV. Economic and Fiscal, part 1., Employment and Housing, B. Impacts, page 51).

COMMENTS

Sue Hestor

"I wish to raise the question of the inappropriateness of consideration of this Draft EIR and of the two that you are considering next week.

"The downtown EIR is underway. You are saying in the downtown EIR that you don't understand cumulative impacts and yet you purport in this EIR and the other two that we have kicking around right now to say that you do. And you either do or you don't.

"I don't think you know the cumulative impacts. I think that's why that amount of money is being spent.

"I don't think CEQA allows you to consider programs when you don't understand cumulative impacts and you have admitted that. So I raise that as a very real legal question."

RESPONSE

See the previous response regarding projects approved, and proposed for construction in the downtown area. Cumulative impacts are also noted in the respective subject categories contained in the EIR. The Downtown EIR has not been completed and the Draft EIR has not yet been released for public review. The Downtown EIR will address cumulative impacts with respect to a number of alternative planning criteria to guide downtown development, including alternative zoning and planning policy issues; this level of analysis goes beyond that of project-related impacts. This EIR deals with site specific cumulative impact considerations related to the proposed project and cumulative impacts resulting from the project and other projects in the downtown area.

2. Construction

Carl Imparato

"There should be a section discussing the significant cumulative impact of office growth, as you have those sections in other EIRs."

Sue Hestor

"I wish to again emphasize that there are at least two levels of cumulative impacts that are warranted for this project and one of them is the cumulative impact of that block, because that block is undergoing more activity by more developers than any other block in the City right now.

"It is in a very critical location in terms of its nearness to the waterfront, to the post office, and to the Muni. Those impacts are multiplied a lot because of all of that activity and all of that construction going on.

"Do people coordinate their construction schedules on that block?

"Do people coordinate their deliveries on that block?

"It is not just one steel company showing up. It is five or six projects, at various stages of construction at the same time and that is a very serious problem."

RESPONSE

In this situation, there exists the unique circumstance for a number of buildings to be constructed on the same block at the same time. As noted in the various EIRs, construction schedules are tentatively established as follows:

Project	EIR	Construction Schedule
Spear and Main St.	EE80.349 (Draft)	Mid 1982 - May 1984
101 Mission St.	EE79.236 (Final)	Late 1981 - Late 1983[1]
135 Main St.	EE81.61 (Draft)	Mid 1982 - Early 1984
Main and Mission St.	81.183E	Not Determined

According to the construction schedules established at this time, the construction of 3 buildings would occur simultaneously from mid 1982 through late 1983, a period of about 1½ years. Because the 3 projects are independent projects with different sponsors and different architects, it is likely that materials delivery, pile driving, building framing and other activities would not be coordinated to minimize impacts on surrounding streets, noise generation, materials storage and utilities installation. As a worst case, 4 pile drivers could be working at the same time on the block generating noise in the area, and materials delivery could occur at the same time creating conjes-tion on Main Street. From a cumulative construction standpoint, to minimize impacts on noise and circulation, it would be necessary for the construction contractors to coordinate the timing of their work during the construction period. It is unlikely that one contractor would be commissioned to construct all of the new structures on the block.

The San Francisco Department of Public Works, Bureau of Building Inspection, would review the construction plans and construction schedule submitted by the project's architects after the site permits would be issued.[1] "Addenda" would be issued in writing

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[1]San Francico Department of Public Works, Bureau of Building Inspection, Don Linn, Chief Inspector, telephone communication, 26 January 1982.

by the Bureau approving each phase of construction for the various projects with the objective of minimizing potential impacts due to overlapping construction activities between the projects. Building inspectors would be dispatched to the construction sites to monitor noise generation, potential traffic obstruction and construction schedules. Where problems would be noted to arise, the Bureau would initiate meetings between the project contractors and members of the Bureau to mitigate noise, traffic flow, materials delivery and other identified problems. Adjustments to construction activity schedules would be made as required.

COMMENTS

John Elberling

> "At various locations in the Second and Folsom and Spear and Main Draft EIR's cumulative San Francisco office development from 1980-85 is estimated at 1.25 million feet per year, or 6.25 million total. In view of the information on said Table C-1 showing 13,659,000 feet completed, under construction, or approved, at 2.731 million over five years, this estimate is clearly in error by an order of magnitude and should be corrected in all instances of use."

RESPONSE

Table C-1 referred to in the comment above is contained on page 200 of the Montgomery and Washington Street Building Draft EIR 81.104 E, Major Office Buildings Constructed in San Francisco as of October 1, 1981. Based on records contained in the Department of City Planning, the Table has been updated to November 1, 1981 (Table 10b) and is shown on page 215 of this document. Table 10b shows that for the 5 year period ending in 1984, 13,135,000 gross square feet were constructed, are under construction or have been approved for construction in San Francisco.

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[1]The existing structure on the project site has been demolished.

III. TRANSPORTATION

COMMENTS

Chairman Rosenblatt

"As a generality, we treat the transportation issues as a series of separate considerations. We talk about parking, we talk about transit, we talk about street capacity. It seems to me that it would be useful at the end of talking about each of those separately, to talk about them altogether, because we are in fact ultimately just talking about how do these in this case 1,200 people get to work and get away from work.

"Behind that, what we are doing is using constant assumptions about the modal splits, regardless of what happens as we look at capacity versus the patronage of the various, the Muni, the commuter modes, the street capacity, the freeway capacity, and the parking capacity.

"They are not all the same in terms of capacity versus patronage. Some of them are getting tighter squeezes at various times than others.

"Does that not suggest that there is likely to be some modal splits going on back and forth and so if it is possible, we ought to make some assumptions about what happens to that modal split if it is going to occur.

"And we ought to look at all of those items together and just in one place after we talk about them all separately and say: This is what's happening to the parking capacity, this is what's happening, etc., etc. to the other capacities, and try to come to some albeit qualitative judgement as to the ability for the employees to get to work or not to get to work and some measure of efficiency or comfort."

RESPONSE

Item 7, Summary of Transportation Impacts is added at the bottom of page 67.

"7. Summary of Transportation Impacts

"As outlined in the foregoing sections, the downtown office projects would have cumulative impacts on the overall transportation system. Those projects approved through October 1981 would add 30-35% to downtown travel during the p.m. peak hour. An additional 30% increase would result from those office projects proposed through October, 1981.

"The freeways, freeway ramps and major streets accessing the freeways would experience increases in traffic congestion. Vehicle queues would increase and peak hour flow conditions would probably extend throughout the 3 -6 p.m. period.

"All of the transit carriers would be at capacity. Passenger loads would be particularly heavy on Muni, BART, Golden Gate and SamTrans. Peak hour buses and trains would be extremely crowded with uncomfortable conditions for all passengers. Vehicles would probably be crowded to the extent that buses would pass up waiting passengers and trains would be unable to admit passengers waiting at platforms. The peak hour congestion would be extended to 2-3 hours.

"Parking facilities would be directly affected by cumulative growth. Parking impacts would relate to the inconvenience for downtown employees and visitors forced to park farther from their destinations. A secondary effect would be the increased parking and traffic in neighborhoods removed from the downtown area. Some motorists might seek parking (both curb and off-street) in peripheral areas and ride Muni to/from downtown. This parking demand would remove spaces from local residences/businesses. It is also possible that parking inconvenience could cause some commuters and/or visitors to shift to an alternate transportation mode. Some persons might elect to join carpools/van pools or might use public transit.

"In summary, the transportation analysis suggests that cumulative downtown development would have major consequences. The magnitude of the impacts would require increases in the system capacity and/or changes in travel habits (i.e. van pool usage, work hour changes, etc.)."

1. Transit

A. Setting

COMMENTS

Carl Imparato

"On page 28, there is a table of projected 1983 Muni patronage and capacity. The problem with this table is that it gives the patronage after you added all the cumulative growth of 7½ million square feet, we guess. How do we know the impact of that growth if we don't know what the impacts are without the growth from any data in the EIR.

"We'd like to know what the patronage and the load factors are in the real base case, that is without cumulative growth. Do the capacities listed include the proposed 10 to 15% increase in Muni capacity or not? What's the base case total capacity? What's the base case total patronage?

"The BART statistics on page 29 are for 1981 or 83? Are they with or without the impact of cumulative growth? You can't tell. And if they are the 1983 figures, do they already include projected capacity increases?

"Similar questions hold for the other transit agencies that are discussed."

RESPONSE

Page 25 of the EIR has been amended as follows:

"2. Transit

The project site is accessible via a number of public transit services. Local routes are provided by the San Francisco Municipal Railway (MUNI) and regional service is available via BART, A.C. Transit (AC), Golden Gate Transit (GGT), San Mateo County Transit (SamTrans), Greyhound and Southern Pacific (SP).

"San Francisco Municipal Railway. Muni operates a total of 38 routes within walking distance (2,000 feet of the proposed site (Table 2, page 26).

"City staff have provided patronage statistics for most downtown routes, projected to 1983. The proposed project and other approved projects would be occupied in 1983 and that year is an appropriate base for analyzing transportation impacts. The projects include existing patronage as well as increased patronage attributed to other committed development in the downtown area. In Table 7, page 60, the p.m. peak hour patronage, capacity and load factors[1] are shown for the lines. As the table indicates, a number of lines would operate over capacity in 1983. Because capacity is based upon 150% of the available seats, any load-factor over 1.00 reflects crowded conditions. (These statistics do not include a planned 10-15% increase in Muni capacity).

Table 3, page 28 of the EIR has been amended to include existing Muni patronage and load factors as shown on page 158 of the Comments and Responses, and has been moved to page 60 in the impacts chapter of the EIR and incorporated with Table 7, to allow more direct comparison of existing, projected and project-related ridership.

Page 29 of the EIR, II. Setting, B. Transportation, has been revised as follows:

"BART. BART staff[2] has provided the following p.m. peak hour operating statistics (existing 1981 conditions) for outbound trains at their peak load points:

	East Bay	Daly City
Seats	9,000	6,400
Passengers	11,646	6,408
Average load factor	1.29[3]	1.00[3]

"With heavier ridership during portions of the peak hour, certain peak trains experience load factors which are approximately 10% higher.

"[1]'Load factor' is defined as the patronage divided by the maximum capacity.

"[2]John Stamas, BART Planning Staff, personal communication, 5 February 1981.

"[3]BART defines capacity as the available seating on trains. The load factors are total patronage divided by available seats. A load factor of 1.00 reflects all seats occupied with no standees."

"AC Transit. AC Transit[1] currently operates approximately 200 buses outbound from the Transbay Terminal during the p.m. peak hour. Based on a capacity of 125% of vehicle seating (AC policy accepts 25% standees) and an average of 50 seats per bus, a total capacity of 12,500 passengers is available. With a current peak hour patronage of 9,000 during the peak runs, the overall capacity reserve is 3,500. However, certain peak runs have higher load factors and therefore little excess capacity.

"Golden Gate Transit. Golden Gate Transit[2] currently operates 147 buses out of the downtown area during the afternoon peak hour, about 120 buses on the financial district routes and ..."

B. Impacts

1) Muni Capacity

The comments in this section have been broken down into five subcategories in order to make them more understandable. The responses, however, for the first three subcategories have been combined as the answers are interrelated.

COMMENTS

Carl Imparato

"We need to know how factors would change between 1981 and 1986 and beyond. We can determine that based on the projected growth and any new 5-year plan.

"We would like to see some simple statements, like,'Muni plans to increase capacity on those lines by so much, by this many new passengers on this line. Therefore, Muni patronage will experience more overcrowding or less overcrowding.' Whatever the surveys show.

Chairman Rosenblatt

"On page 59, the section relating to transit impacts on Muni, in the last paragraph on the page the sentence said 'It appears that the system capacity can be increased by 10 to 15 percent.'

"[1]Gene Gardiner, Assistant Manager, Division of Planning and Research, AC Transit, telephone conversation, 27 March 1981.

[2]"Alan Zahradnik, Golden Gate Transit Planning Staff, telephone conversation, 27 March 1981."

'Appears' and 'can' appear to me to be soft words. I would hope we can come up with something more specific as to whether it is proposed that that increase will be done.

"And that raises the whole question in turn of what Muni's intentions are and where they intend to get the resources to do that and whether the probability of those resources have changed since their estimate for that increase was originally done.

"If that probability has changed or has decreased, then some discussion should be there as to what the impacts would be.

"On page 61, first sentence says, 'The capacity increase would generally relieve...'Can we be more quantitative about what 'generally relieve' means relative to the load factors and the question of whether the projected load factors in the table already include the stated 10 to 15% capacity increases mentioned on the page before."

Commissioner Bierman

"Page 57, I am disturbed about what this peak business means. Peak of the peak is when it is so terrible for people and I don't think that's covered in here. It's just the peak hour, but the crush in any 15-minute period is what people are standing in to get home and it is absolutely miserable. To me this particular document doesn't make a heavy enough case for the need for transit money from the developers downtown.

"If we went by this document, I don't know that we would have such good luck with getting the transit district to order the transit fee. It has to be realistic.

"On page 60, is that the way that we have done Muni patronage before, where we used the figure 1 for 150% . It really doesn't show the problem, I don't think. I mean it does if you read down and it is 150%. That's beginning to get at how horrible it is for people.

"It is awful at 5:00 o'clock to have worked all day and to be really weary and to get on something where you don't have a prayer of sitting down and to have elbows and knees and heads bumping.

"It just seems to me that this kind of table doesn't tell that story and that we ought to have something better -- I have suggested for the downtown EIR that we have a picture inside the buses of what it's really like and I don't think this table does it."

John Elberling

"Page 59/61: This DEIR states that additional LRVs and articulated coaches would 'generally relieve the projected load factors,' and seems to imply that, since there will be additional capacity, new riders that would be generated by this development would not negatively impact Muni. However, these increased capacities have costs associated with them (i.e., $1 million for each LRV) and they were planning in anticipation of increased development and growth of downtown employment. Therefore, this new development, and the Muni riders it would generate, must share responsibility for the increased Muni costs."

2) BART and Other Transit Systems

COMMENTS

Carl Imparato

"On page 61, we have a problem arising in the study of BART impacts, too much ambiguity. The paragraph mentions that BART's 5-year plan calls for 20% increase in capacity. It mentions that BART ridership would increase by 20%. But it doesn't make it clear that the 20% patronage increase would be only over a 2-year period, whereas over a 5-year period, patronage would increase considerably more, outstripping capacity increases.

"Similar problems hold with the analysis for the other transit system."

Chairman Rosenblatt

"On page 62 under the Golden Gate Transit, could we have a more explicit discussion with numbers relative to the numbers that are stated on pages 30 and 58. It talks about patronage versus capacity."

3) Cumulative

COMMENTS

Carl Imparato

"Regarding the projects that are used in the so-called cumulative impact analysis, we ask what projects are they? It's not in the EIR. All the earlier ones state what projects they are. What would be the cumulative impact for 26 million square feet, the number based on the Mayor's figures? Extrapolating from the numbers that are in the draft, we guess that the actual cumulative impacts are 87,000 more p.m. peak hour person trips. The limited peak-hour impact analysis done really understates the peak-hour person trips by the factor 3.2.

"Page 56, we estimate that the 30% increase in Muni downtown peak hour patronage would really be 103% increase in patronage, 24,400 more passengers, if the full cumulative impact figures were used.

"We think modifications really ought to be made to the data for all the other transit system on page 58. Could the real cumulative impact figures be used and the appropriate changes be made.

"The problems that we discuss on page 57 point out how misleading it is to use a limited amount of office space for the cumulative impact analyses.

"Regarding Muni, the table on page 60 is misleading. There is no way in that table that you can figure out what the present 1982 patronage capacity and load factors are. So how are you going to figure out the cumulative impacts without knowing the base case? Other EIRs do give that data.

"Page 7 of the summary says that cumulative growth would increase Muni's p.m. peak hour patronage by 7,151 passengers. What percentage of present capacity is that? That is not in the EIR."

John Elberling

"Page 59: The impact analysis for Muni is very vague. In order to best understand the impact which this development would have on Muni, the cumulative impact of all

proposed development must be determined, and the percentage of that cumulative impact attributable to this proposed development devised. It would be most helpful if this cumulative impact was indicated by stating the number of additional Muni riders, and then the number of additional Muni vehicles that would be required to carry the increased ridership. The cost of providing those additional vehicles should then be calculated, and a percentage of that cost applied to this proposed development.

"2) The proposed project site is located near very heavily used transit streets. Any increase in auto, truck, and pedestrian traffic on these streets would have a strong negative impact on Muni operating schedules. The effect on Muni operations of the increased auto trips and pedestrian trips (crossing these streets and delaying turning movements of transit vehicles) should be estimated. This analysis can best be done on a cumulative basis first, looking at all proposed future development, and then the percentage of this impact that would be generated by this development should be determined. The cost to Muni of these delays and possibly increased accidents should be estimated, and significant mitigation measures proposed.

"3) Page 59: This page states: '...the project would have minimal impacts on the 1983 load factors.' There is a tendency for people to claim, as this document does, that a few additional riders will not negatively impact Muni. But everyone who uses Muni can make a similar statement: 'It's not me who generates costs to Muni; the bus would run on its present schedule whether I ride it or not; I'm just one person so I don't impact Muni.' But this proposed development would contribute to the cumulative impact on Muni and should be held responsible for this impact."

RESPONSE

The first sentence of the fourth paragraph on page vii, Summary, is revised to read:

"Impact: The committed downtown development would increase Muni ridership by about 9,470 trips (about a 30% increase) during the p.m. peak hour (the proposed project would add about 288 p.m. peak hour trips)."

The second paragraph on page 56, Transportation, 1. Project and Cumulative Trip Generation/Distribution is revised to read:

> "In comparison with the foregoing figures, the City projection[3] of cumulative travel for other downtown projects approved through October 1980 is approximately 25,500 peak hour person trips. In addition, a preliminary review of projects approved from November 1980 through October 1981 indicated about 7,800 additional person trips. The project would amount to about 3% of the cumulative peak hour trip generation of these pro-jects. This approved cumulative development represents about 8.8 million square feet of new office construction."

The cumulative transportation impacts have been recalculated to reflect the additional approved projects. The cumulative downtown projects approved through October 1981 are listed below:

- 444 Market (Shaklee)
- Pacific III
- Levis Plaza
- 101 California Street
- Federal Reserve Bank
- 1 Montgomery (Crocker Tower)
- 1 Sansome Street
- 150 Spear Street
- Embarcadero 4
- Daon Building (Battery and Sacramento)
- Pacific Lumber Building (Washington and Sansome)
- 456 Montgomery Street
- 315 Howard Street
- Pacific Gateway
- 10 United Nations Plaza
- 1170 - 1172 Market Street
- 750 Battery Street
- 550 Kearny Street
- Ramada Hotel
- Holiday Inn
- 5 Fremont Center
- 101 Montgomery
- China Basin
- 50 Grant
- 25 Jessie
- 101 Mission
- 1155 Market
- Hilton II Tower
- Holiday Inn (Civic Center)

Table 6 on page 58 has been amended.

(Table appears on page 157 of Comments and Responses)

The following material is added after the third paragraph on page 56:

"In addition to the projects approved (through October 1981) in the downtown, a number of other developments have been proposed. Based upon a report prepared by the Department of City Planning,[1] about 9.3 million square feet of downtown office development has been proposed through October 1981 but not yet approved. If approved, these projects would double the cumulative downtown growth. A total of 32,500 p.m. peak hour person trips would be added to the 33,000 new trips generated by approved development. The project would add 1,000 trips for a total peak hour generation of 66,500 new person trips. The potential impacts of this growth are generally discussed in the summary at the conclusion of this section."

Item 3., Transit Impacts, pages 59-62 has been rewritten as follows:

"Muni. The 1983 patronage characteristics and load factors for the various downtown MUNI lines are outlined in Table 7, page 60. These statistics already reflect the growth in patronage due to other downtown development. The additional peak hour patronage due to the proposed project was added to the 1983 patronage projections on a proportional basis. As indicated in Table 7, (as amended and included in this document on page 158), the project itself would have minimal impacts on the 1983 load factors. However, cumulative development would increase patronage by about 30% and 21 of the 34 lines with ridership data would experience load factors greater than 1.00[2]. Another 6-8 lines are within one commute bus run of reaching capacity. Buses and Muni-Metro vehicles would be crowded during the entire peak hour and passengers would experience uncomfortable conditions. Since the listed load factors are an average during the peak hour, certain runs could experience even greater congestion than average."

"The approved cumulative development would generate about 9,500 additional person trips on Muni during the p.m.

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[1]Memorandum from Dean Macris, Planning Director to Planning Commission entitled "Alternative Interim Controls on Downtown Development" 18 November 1981.

[2]A load factor of 1.00 reflects a ridership of 150% of available vehicle seating. With a load factor of 1.00, a 40 seat bus would have all seats filled plus 20 standees in the aisle. However, the LRVs on MUNI Metro lines are designed for a seated capacity of 68 and a maximum passenger load of about 150; at a load factor of 1.00, about 80 people would be standing (from MUNI 5-Year Plan, 1979-84, page 20).

TABLE 6

PROJECT AND CUMULATIVE TRIP GENERATION DURING PM PEAK HOUR

Mode and Distribution	Project	Other Development[1]	Total
Auto			
North Bay	40	2,275	2,315
Peninsula	58	2,769	2,827
East Bay	86	3,448	3,534
San Francisco	176	3,518	3,694
Total Auto	360	12,010	12,370
MUNI	290	9,470	9,760
BART			
East Bay	90	2,507	2,597
Daly City	60	2,223	2,283
AC	85	2,530	2,615
SamTrans	15	450	465
Sourthern Pacific R.R.	45	1,330	1,375
GGT	45	1,440	1,485
Ferry	15	400	415
Other	30	670	700
Totals	1,035[2]	33,030	34,065

[1] "Other development" includes downtown projects approved through October, 1981, but not yet built.

[2] This number exceeds the 1,000 person trip projections because intermodal transfers are included.

TABLE 7

SUMMARY OF EXISTING MUNI PATRONAGE, 1983
P.M. PEAK HOUR-OUTBOUND DIRECTION

	1983 PATRONAGE				LOAD FACTORS[1]		
LINE	EXISTING PATRONAGE	WITHOUT PROJECT**	WITH PROJECT	CAPACITY	EXISTING PATRONAGE	1983 WITHOUT PROJECT	1983 WITH PROJECT
1	400	499	504	450	0.89	1.11	1.12
1X	613	766	744	750	0.82	1.02	1.03
2	572	716	723	600	0.95	1.19	1.21
3	511	638	644	525	0.97	1.21	1.23
4	235	294	297	375	0.63	0.79	0.79
5	986	1,233	1,245	1,275	0.77	0.97	0.98
6	500	627	633	675	0.74	0.92	0.94
7	327	410	414	450	0.73	0.91	0.92
8	658	823	831	1,125	0.59	0.73	0.74
9	531	633	670	750	0.71	0.88	0.89
11	676	844	852	750	0.90	1.13	1.14
12	487	609	615	525	0.93	1.16	1.17
14	1,215	1,521	1,536	1,275	0.95	1.19	1.20
14GL	253	317	320	300	0.84	1.06	1.07
14X	655	819	827	675	0.97	1.21	1.23
15	887	1,108	1,119	975	0.91	1.14	1.15
21	660	827	835	825	0.83	1.00	1.01
27	158	196	198	300	0.53	0.65	0.66
31	498	626	632	525	0.95	1.19	1.20
31X	569	713	720	675	0.84	1.06	1.07
32	416	520	525	1,050	0.40	0.50	0.50
38	989	1,236	1,248	1,125	0.88	1.10	1.11
38L	656	819	827	675	0.97	1.21	1.23
38AX	503	631	637	600	0.84	1.05	1.06
38BX	194	242	244	300	0.65	0.81	0.81
40X	321	403	407	525	0.61	0.77	0.78
41	NO STATISTICS AVAILABLE						
42	230	289	292	300	0.77	0.96	0.97
55	1,456	1,821	1,839	1,650	0.88	1.10	1.11
61	NO STATISTICS AVAILABLE						
71	379	474	479	375	1.01	1.26	1.28
72	276	346	349	300	0.92	1.15	1.16
80X	433	542	547	600	0.72	0.90	0.91
J	798	998	1,008	1,235	0.65	0.81	0.82
K	3,119	3,901	3,940	3,900	0.80	1.00	1.01
L	NO STATISTICS AVAILABLE						
M	NO STATISTICS AVAILABLE						
N	2,050	2,565	2,590	2,400	0.85	1.07	1.08

[1]Load factor is a measure of vehicle capacity. For most Muni vehicles a load factor of 1.00 represents a designed capacity of 150% of the number of seats. For LRV's a load factor of 1.00 represents a designed capacity of 220% of the seated capacity. For example, a load factor of .85 on the N Judah line would mean that approximately 60 people would stand, 20 fewer than the maximum number of standees for which the vehicle was designed.

*Source: San Francisco Department of City Planning, Guidelines for Environmental Evaluation Transportation Impacts, June 1980, revised October 1980.

peak hour. If these trips were accommodated in 45 passenger buses with load factors of 1.00 (150% of the available passenger seats), these new trips would require about 140 additional bus runs during the peak hour.

"The approximate annual operating cost would be about $1.9 million (9,500 peak hour rides doubling for morning plus afternoon peak trips x 250 working days per year x $0.3886 marginal cost per peak period ride. The proposed project would add about 3% or $58,600 to this cost. The theoretical capital costs attributable to the project and cumulative development would depend upon the number of new vehicles needed to accommodate 140 additional bus runs in the peak hour. A specific estimate would rely upon exact routing, scheduling, headways, etc. associated with the new runs

"Muni plans [1] (in anticipation of patronage growth) project a 10-15% increase in the system capacity by 1986. This increase would reflect added capacity in the MUNI Metro light-rail service, and the replacement of existing buses with articulated coaches. This capacity increase would tend to reduce the projected load factors, but cannot be specifically quantified; benefits, however, would depend upon a more detailed improvement program with capacity increases cited for each route. Even with a 10-15% capacity increase, 14 of the 38 lines listed on Table 7 would have load factors approaching or exceeding 1.00.

"Muni service could also be affected by increased vehicular and pedestrian activity. Cumulative downtown growth would add traffic and pedestrian volumes to the various streets and crosswalks in the project area. These increased volumes would add to traffic congestion, vehicle queues, and the potential for conflicts with Muni coaches. The conflicts and congestion would be most disruptive along Mission Street. As a primary transit corridor for Muni, any increases in traffic and pedestrian crossings could delay and disrupt Muni service. The cumulative effect of increased auto, truck and pedestrian traffic on Muni would require that future service levels of all intersections in the downtown area be calculated. The calculations would require 1) traffic, turning movement, and pedestrian counts for all streets and intersections in the downtown, 2) information on trip origins and destinations of existing development, and, 3) locations of proposed developments, and assumptions as to trip origin and destinations of proposed development. Assumptions could be made about delays Muni would experience based on this information; it would be difficult to assign a specific time or value to the delays. Based on assumptions required, values would probably not be statistically valid.[2]

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[1] San Francisco Municipal Railway 1981-86 Muni 5-Year Plan, 15 May 1981, pages 2-249 - 2-252.

[2] Glenn Erikson, Transit Preferential Street Coordinator, Department of City Planning, conversation, February 5, 1982.

"BART. The approved downtown development would increase BART ridership quality/quantity by approximately 20% (the proposed project would contribute an additional 1% to this increase). It is projected that the East Bay trains would experience average peak hour load factors of 1.4 - 1.6 and higher factors on certain peak trains.[1] BART's short-term (5-year) improvement program calls for an approximately 20% increase in capacity with added cars and some decrease in headways.[2] These improvements would allow the peak hour load factors to average 1.1 - 1.3; these factors are considered acceptable by BART staff.[3] It is recognized that further development beyond 1983, would generate patronage which would exceed the proposed capacity increase raising load factors beyond these levels.

"AC Transit. AC Transit's current peak hour service has a capacity reserve of 3,500 persons (assuming capacity equals 125% of the vehicle seats). The proposed project and cumulative development would generate about 2,600 new trips, absorbing most of this excess capacity. AC Transit staff indicate the capacity will be increased approximately 10% over the next 3-4 years, and this increase would raise the capacity reserve while preserving somewhat lower load factors on peak hour vehicles.[4] If the proposed downtown bus terminal to replace the existing Transbay Terminal is built, operating efficiency could be increased to the point where a greater number of buses per hour could be accommodated.[5]"

"Golden Gate Transit. With a design capacity of 8,085 peak-hour passengers, (not including ferries) the effect of cumulative downtown development would be to raise patronage to about 8,100 persons. Because of financial limitations, it is likely that the District would not be able to markedly increase its capacity.[6]

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[1]BART defines a load factor of 1.00 as all seats filled with no standees.

[2]Ward Belding, BART Planning Staff, telephone conversation, 23 July 1980.

[3]Ibid.

[4]Gene Gardner, AC Planning staff, telephone conversation, 23 July 1980.

[5]Ibid.

[6]Peter Dyson, Golden Gate Transit, telephone conversation, 17 July 1980.

"SamTrans and Southern Pacific. The patronage from cumulative development would appear to exceed the available reserve capacity of SamTrans. No specfic capacity improvements have been cited by the District.

"The Southern Pacific service would be improved through the addition, within 3-5 years, of approximately 1,200 seats to the southbound peak capacity.[1] With the system's existing reserve capacity of about 1,530 seats, the total capacity reserve would be about 2,730 seats. Thus, the addition of about 1,575 new peak hour passengers due to cumulative downtown development could be accommodated."[2]

4) Construction

COMMENTS

Sue Hestor

"In the discussion of the Muni and the Muni impacts there is no discussion of the impact of development in this block on Muni because of the nearby Muni yard, which all of the buses heading down Mission Street aim for and where they turn around.

"When 101 Mission was out, the Commission didn't understand or chose not to understand my question.

"It is not merely a question of scheduling deliveries of steel and of equipment, so that it does not occur during Muni's peak periods. It is a question of putting a barricade in the street and taking a lane of traffic.

"That is the problem in that area. That was the problem for 101 Mission.

"When you have a lot of construction activity going on in an area, the traffic gets all screwed up, because maneuvering goes on all day long as workers and equipment come and go to the site.

"Anyone who goes downtown right now, near any one of the projects, will notice that. And we have 6 projects going on in this block.

"Muni is going to have problems and it deserves to be analyzed as discrete from the number of passengers on Muni, but interfering with all of the Mission Street lines, many of which are electrified and have problems maneuvering because they are on those trollies."

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[1]Cecil Smith, CalTrans, Southern Pacific data based on telephone conversation, 27 April 1981.

[2]Ibid.

RESPONSE

The following material is added to Item 6., Construction Impacts, on the bottom of page 67 of the EIR.

> "The construction activity associated with the approved and proposed projects in the area could have a cumulative effect on Muni service. In addition to the 101 Mission project (approved) and the proposed Spear and Main Street office building, two other office projects are proposed for the block bounded by Mission, Main, Howard and Spear Streets. Although deliveries would probably occur on the side streets (Main and Spear), the additional truck traffic could be disruptive to the numerous Muni lines on Mission Street. If trucks double park, Muni vehicles would be forced to maneuver around these vehicles. Muni service could also experience delays if the truck activity is disruptive. The proposed project would not result in the actual closure of traffic lanes. Adjacent to other projects in this block, the parking lanes would probably be taken for use as pedestrian walkways. Without parking lanes, trucks or other vehicles could double park in a traffic lane, further disrupting auto traffic in general and Muni buses in particular.

5) Unavoidable Adverse Impacts

COMMENTS

Carl Imparato

"On page 115, it should be made clear that there will be a major adverse cumulative impact, not only on Golden Gate Transit, but major adverse community impacts on Muni, BART, AC, SamTrans, and Southern Pacific."

RESPONSE

The second, third and fourth paragraphs on page 115, Unavoidable Adverse Impacts, 1. Transportation, have been revised to read:

> "The effect of cumulative downtown development would be to raise patronage beyond the capacity of Golden Gate Transit. Of the 38 Muni lines serving the site, 21 lines would be over capacity as a result of cumulative development. Lesser impacts would be experienced by BART, AC Transit, SamTrans and Southern Pacific.

"The project would generate demand for approximately 340 long-term parking spaces and 145 short-term parking spaces (and would displace 110 spaces in an existing lot on the project site). The majority of the demand would need to be accommodated at other locations in the area, where current parking occupancy rates are about 90%.

"Downtown development projected for the next 3 years would add to the parking demand in the downtown area, increasing occupancy to 100+%. Although the proposed project would account for only a small portion of this increase in parking demand, there would be cumulative demand. It is likely that parking would shift farther from downtown with increased demand south of Folsom Street and beyond to the Embarcadero."

C. Mitigation

COMMENTS

Carl Imparato

"Regarding transit mitigation, we ask that the developer agree to contribute not only to an assessment district, but agree to payment of a development fee to pay for the project's incremental impact in requiring a significant Muni expansion program.

"We ask the Commission to exercise its regional responsibility by requiring the developer to also pay for the appropriate share of the project's impact on the other transit systems. They are having trouble raising money just like the Muni is."

Commissioner Bierman

"I was troubled that in the mitigation measure.... I would like the developer to think twice. It seems that to get a consultant to be a transportation broker is not that much to ask of a developer, and they seem to not want to do that and I think that's necessary and has been shown to be very successful."

Chairman Rosenblatt

"On page 105 under the mitigation, the end of the first full paragraph, it's not clear to me whether the mitigation measures that follow are in fact those that the project sponsor is now prepared or committed to. It talks about those in terms of the mitigation strategies in the department's guidelines. It isn't clear whether those have been accepted or intended by the project sponsor."

RESPONSE

The following sentence is added at the end of the first paragraph on page 105:

> "The following mitigation measures are accepted by the project sponsor.

A separate study would be required to determine the capability and legality of the City to require fees from sponsors of new buildings to cover increased demand for other transit services operating in the region.

Transportation mitigation measure number 2 on page 106 is amended to read:

> "The project sponsor would employ a transportation broker responsible for coordinating, implementing and monitoring programs among tenants and employees to encourage transit use and ride-sharing, including on-site sale of BART tickets and Muni passes and employer subsidized transit passes, establishment of an employee carpool/vanpool system in cooperation with RIDES for Bay Area Commuters or other such enterprises."

2. Parking

A. Setting

COMMENTS

Commissioner Nakashima

> "One of the things I always asked for, and seems this one is really lacking, is in analyzing the parking availability, I've always asked for a consistency in the boundaries of what's available..
>
> "This one doesn't even cover any boundary, that doesn't even say what's available. It just tells you what they think this building would generate. I think we need to look at what's available before we can accept the fact that 85 or 95% of the available parking is already occupied."

Commissioner Bierman

> "Pages 30 and 31, ... and I think further on talk about parking and (it) doesn't have any map as we are accustomed to having, a diagram of existing parking.
>
> "I am concerned that this site even may have been used as a parking resource for some of the other buildings, whether in that block or nearby.

"Could we make sure whether this has been used as a resource and whether this one is using any sites that are already taken up with building plans. One way we can catch onto that is when we see a diagram, not just by the written page."

RESPONSE

The second paragraph on page 31 of the EIR is amended to read:

"A number of parking occupancy studies have been conducted in this area. As part of the EIR on the 5 Fremont Center Project (EE80.268),[1] parking surveys were conducted on 7-9 July 1980 in the area bounded by The Embarcadero, Harrison Street, Third Street, Kearny Street and Washington Street. Within this area, a total of 15,020 long-term (greater than 6 hours) off-street spaces are available, (including the 110 space surface lot on the project site) and the average occupancy is approximately 89% (about 13,350 spaces were occupied and 1,670 were vacant on the dates of the survey).

B. Impacts

COMMENTS

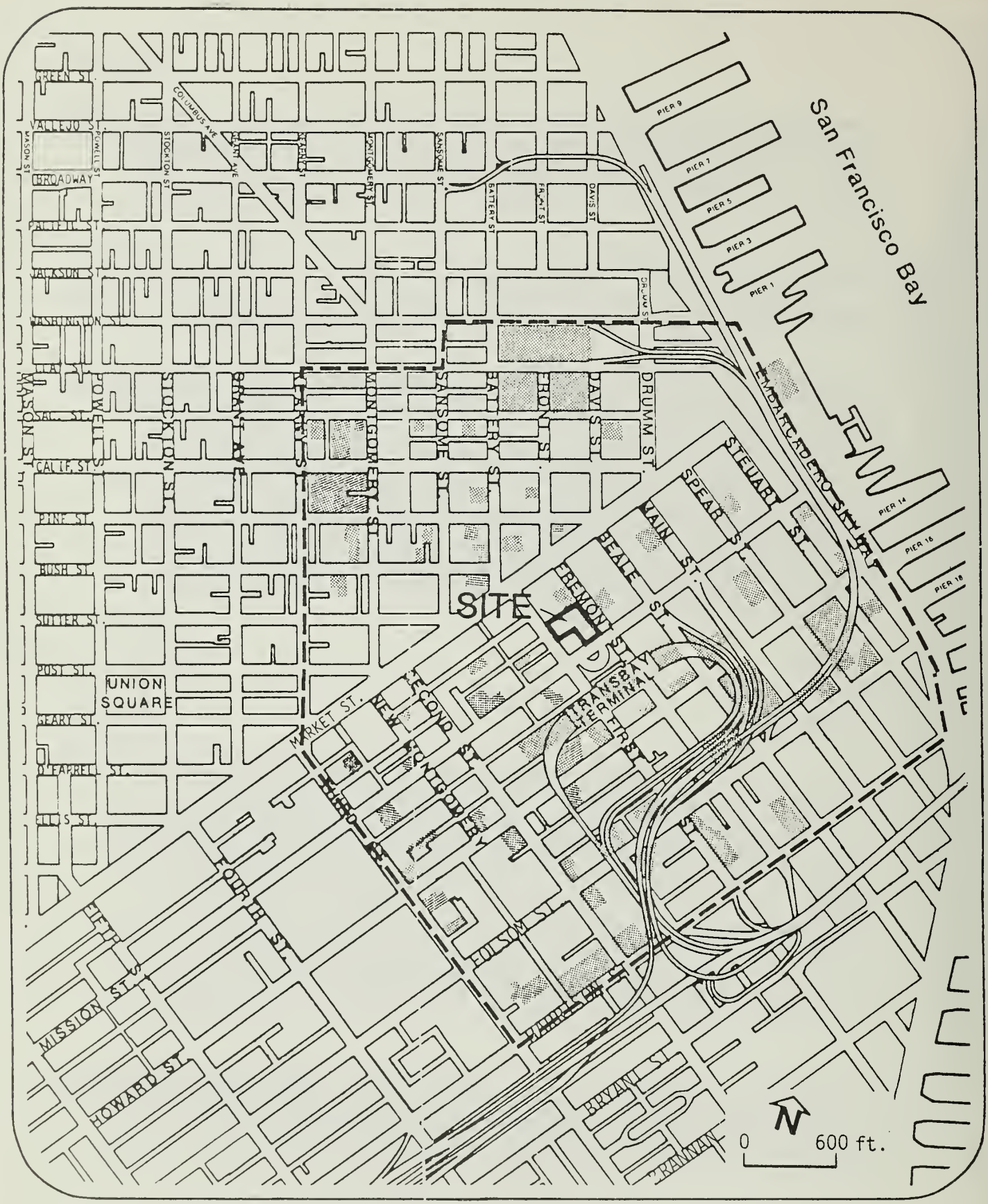
Carl Imparato

"Page 8 of the summary and page 62 mentions the demand for 340 long-term spaces and 145 short-term spaces. In other EIRs it mentions the loss of 110 spaces presently on that site. But nowhere under impacts do you see these two facts put together, to show that the net parking impact of the project would be 595 spaces, the additional demand plus the loss of spaces. You never see those two numbers added together and that's misleading.

"Page 31, we ask how many commuters currently park in the neighborhoods and then ride the Muni into downtown?

---

[1] San Francisco Department of City Planning, Final Environmental Impact Report, 5 Fremont Center (EE80.268), certified 12 March 1981. The parking survey map is shown on the following page and is included in Appendix A of the EIR.



Study Area Boundary

Off-Street Commercial Parking

SOURCE: TJKM, Transportation Consultants

FIGURE 19: PARKING SURVEY STUDY AREA

"I know it's a problem, because that's the only reason why there is a preferential parking program that expands every year to more and more neighborhoods.

"Data ought to be available about that because the City has to do a study before they institute preferential parking in the neighborhood. We would like to see something about the impacts of commuter parking in the neighborhoods under the environmental setting.

"On page 63, the parking deficit associated with approved development is never stated, let alone that associated with all development in the pipeline. Other EIRs do give estimates. We estimate, based on present modal splits we find in other EIRs, a deficit as high as 39,000 parking spaces. What is the deficit associated with the proposed and approved office development?

"On page 63, why is only 7 million square feet of development projected over the next five years? The Planning Commission has approved 7 million square feet in the last two years and there is an enormous number of projects coming up.

"Where are all the new commuters going to park? A lot in the neighborhoods, as we said before and we would like to see that impact discussed. Other EIRs discuss it. Please discuss where and why the preferential parking program is expanding, discuss the costs associated with the program, because those are costs which really would be most appropriately borne by the developers who create the problems and not the residents who suffer the impacts and have to pay for the parking sticker, too.

"The full 595 parking space impact should be noted, not just the 485 extra spaces needed for the new demand.

"The impacts on San Francisco's neighborhoods due to cumulative parking impacts should also be noted.

Chairman Rosenblatt

"On page 63 in the middle it talks about parking. There is a sentence that says, 'It is likely that parking would shift south of Folsom and beyond.' Where is beyond relative to what is likely in terms of people walking to the site or using alternative means of getting to the site and having to park somewhere else.

"On top of page 64 and elsewhere in the EIR described are proposed 35 spaces of parking to be available for long-term parking by tenants. There should be some discussion as to how that fits with our Master Plan policies."

RESPONSE

The last line on page 62 and the first paragraph on page 63 have been amended to read:

". . . in the area. Since previous parking/inventory/occupancy surveys in this area (see Section II.B., Setting, Transportation, page 20), indicate an occupancy rate of about 89%, little parking is currently available. The project would displace 110 spaces in an existing surface lot. This displacement would raise the occupancy rate to about 90%. The parking demand generated by the project would raise the occupancy to 92%. The occupancy would be even higher with the development of other nearby projects - the Pacific Gateway and 150 Spear Street office buildings, the 115-135 Main Street building, the Main and Mission Street building and the 101 Mission Office building (see Figure 13, page 22). In addition, cumulative approved downtown development would add to the parking demand in the downtown area,[1] (generating a demand for 18,000 spaces). The increased demand due to the project and cumulative development would effectively raise the parking occupancy to 100+% within the area surveyed. It is probable that there would be an increased parking demand south of Folsom Street and beyond to The Embarcadero. Added vehicle circulation would also result from the increased number of vehicles seeking the limited number of parking spaces, increasing street congestion.

"This analysis suggests that parking facilities would be directly affected by cumulative growth. Parking impacts could relate to the inconvenience for downtown employees and visitors as they are forced to park further from their destination. A secondary effect would be the increased parking and traffic in neighborhoods which are removed from the downtown. Some motorists might seek parking (both curb and off-street) in peripheral areas and ride Muni to/from the downtown. This parking demand would remove spaces from local residences/businesses. In response to the intrusion of commuter parking into neighborhoods, preferential parking areas could be implemented (as have already been implemented in the North Beach and Telegraph Hill areas). The costs of administering these programs

---

[1]The list of cumulative projects (page 155 of the Comments and Responses) would amount to about 9 million square feet of office area. Based upon the City Planning Code, this area would generate a demand for about 18,000 parking spaces.

(and the costs of purchasing parking permits by residents) would be impacts associated with cumulative development. It is also possible that parking inconvenience could cause some commuters and/or visitors to shift to an alternate transportation mode. Some persons might elect to join carpools/vanpools or might use public transit.

"The project's provision of long-term tenant parking would not be responsive to the the plan-designated intent to provide short-term parking in the area, as outlined in the Transportation Element of the City's Comprehensive Plan."

C. Mitigation

COMMENT

Commissioner Bierman

"On page 106 it talks about the bicycle parking being on the exterior of the building. That seems a step backward and I can't believe that there isn't some way in a building this size that the bicycles, if the bicycles are a serious thing which in the old days when Commissioner Starbuck was here we used to laugh a little, but I mean the reason for providing spaces is a lot of people want to ride bikes. Why a building like this couldn't find room inside, I don't understand. Due to rainy days, danger of vandalism or theft, seems to me they should be inside the building."

Carl Imparato

"We see no substantive mitigation of parking impacts here. We ask that at least the developer be asked to pay for a proportionate share of the costs of administering the preferential parking programs, so that the burden of this downtown parking impact mitigation program doesn't fall on City residents."

RESPONSE

Item 6., Mitigation, Transportation, pages 106-107 is amended to read as follows:

"Bicycle parking would be provided on the basement level of the project within the parking garage.

"For safety, a buzzer would be installed to signal to bicylists when a vehicle would be entering the ramp leading to/from the basement garage."

Item 5, Mitigation, Transportation, page 106 is amended to read as follows:

"5. The project sponsor would participate in any future areawide study of current parking conditions and future needs. If new short-term, or peripheral parking is appropriate in the downtown area, the project sponsor would participate in the equitable funding of such facilities through a special assessment district according to criteria determined by the study.

3. Traffic

A. Setting

COMMENT

Carl Imparato

"On page 25 a statement is made that Interstate 80 is currently jammed during the evening peak hour.

"It is our observation that traffic flows are pretty miserable on Interstate 80 from 3:30 on. Could the final EIR talk about this a little bit. Could it talk about the conditions on Interstate 80 and the Bay Bridge for the periods 3:00 to 4:00, 4:00 to 5:00, 5:00 to 6:00 and 6:00 to 7:00 p.m. What are the levels of service during these periods.

"This data has very important ramifications with regard to flex time, which we also hear touted in the EIR as a solution to traffic problems. If, indeed the freeways are jammed from 3:30 on, it's pretty unlikely flex time is going to help much in this respect. Employers are not going to let their employees work from 4:00 in the morning until 2:00 in the afternoon.

"Nothing is said in the section about the other arteries. Traffic on 101 South doesn't move at all during the peak hour. Could we have some discussion of Highway 101, Lombard Street, Doyle Drive and the other major arteries?

"In direct response to the projected cumulative impacts of San Francisco office growth on a regional highway system, I know proposals are in the works for widening Interstate 80 and there is talk about a second deck on the Golden Gate Bridge. If these proposals are in fact responses to cumulative office growth, we feel it is appropriate to discuss the status of those proposals in the final EIR and we ask that you do this."

RESPONSE

The first paragraph on page 25 is amended to read:

> "Because traffic flows during the peak 15 minutes are 10-15% higher than average flows throughout the peak hour, the intersections of Mission/Main, Mission/Beale and Main/Howard operate approximately 1 service level lower during these peak 15-minute periods.
>
> "While these service levels indicate stable traffic flow conditions, a key constraint on vehicle access is the downtown freeway network. The Interstate 80 and Highway 101 freeways are currently operating at jammed conditions (typified by Service Level F) during the evening peak hour.[1] The peak hour generally occurs within the 3-6 p.m. period, but the specific peak hour varies daily (generally 4:30 to 5:30 p.m.). The peak hour is 10-20% higher than the other 2 hours in the 3-6 p.m. period. With the cumulative downtown development approved through October 1981, the peak hour traffic flows would probably extend throughout the 3-6 p.m. period. Thus, the overall congestion on the freeway can affect the flow on specific freeway links or individual ramps. The 101 corridor north (Van Ness, Franklin, Lombard, Golden Gate Bridge, etc.) also operates at capacity (service level E) during the p.m. peak hour.
>
> "There are currently no plans for increasing the capacity of the various freeways and state highways serving the downtown area."[1]

COMMENT

B. Impacts

COMMENT

Paul H. Hughes, Acting District CEQA Coordinator
Caltrans District 04

> "We would like to review the traffic volumes for through and turning movements for a.m. and p.m. peak-hours used to determine the service levels for Mission Street/Main Street and Mission Street/Beale Street intersections shown on page 57 of the DEIR."

RESPONSE

Peak hour volumes and service level calculations for Mission/Main Streets and Mission/Beale Streets are included in the EIR appendix (pages A-2 through A-3). The EIR (pages 50-69) examines the project-generated traffic and its impacts on the State Routes.

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[1]Scott MacCalden, Senior Engineer, Highway Operations Branch, Caltrans, telephone conversation, 28 December 1981.

Kay Patchner

"Another way to look at the need to make this measurement is to understand that when you are talking about traffic and transportation, that you've got a great many single parents in San Francisco who do not own automobiles.

"They have to, prior to going to work and using the Muni transit system or BART or any of the other systems, get their child to a childcare center or babysitter of some sort.

"And it is increasingly apparent that a significant part of the ridership on public transportation are single parents and I seriously doubt if on the section of transportation and traffic that's taken into account."

RESPONSE

The transportation analysis considered the p.m. peak hour impacts on downtown transportation facilities (including streets, transit, parking, etc.). This analysis focuses on the most directly impacted facilities serving downtown commuters and visitors. The marital status of transit riders in itself is not important; there may be occasions when working couples take their children to childcare facilities via Muni transit. Transportation to/from childcare facilities would probably not affect downtown transit line capacities, parking, etc.

Carl Imparato

"Page 56, the statement is made the cumulative travel projections are for 25,500 peak hour person trips.

"How much office space exactly is included in that scenario? We estimate 7½ million square feet. Maybe that's what it is.

"On page 57, the 30% increase in p.m. peak hour auto trips, they say 9,000 additional. We would say it's really 31,000 more cars or 103% increase.

"Page 57 looks at the levels of service at various intersections. On page 57 you see Mission and Beale, using the limited analysis of 7½ million square feet, you find that the level of service at Mission and Beale drops by 1983 from level C to level E. That's bad enough.

"But go back 1 year, you look at the 5 Fremont EIR which came out in draft form 1 year ago, that analysis showed that the Mission and Beale intersection drops to level F, which is the worst possible level, by 1984. That analysis is more comprehensive and really showed the impact more severe than you are seeing in this draft EIR.

"Just (as an) illustration of the point, similarly, the draft shows that Mission and Main has a drop in level of service from level B to level D. But the 5 Fremont EIR, on the other hand, shows that it drops to level F. That's quite a difference.

"Next on page 57, there is a statement in that freeways and ramps will be critical links by 1983 and that delays will be extended. This raises some questions we would like to see answered, hopefully. How long will those delays be? How long will those delays be with 26 million square feet of development? What about the possibilities that gridlock might occur in the City?

"On page 59, regarding the environmental review of the demolition of the Embarcadero Freeway, we would like to know what the time schedule is for this environmental review and when will data on its impact be available? What level of development is considered in that environmental impact review?

"If demolition is, 'considered to be among the City's highest priorities,' is it possible that continued approval of downtown office projects contradicts that goal by making that priority unworkable?"

Commissioner Bierman

"I found the tables about street clogging just as limited and not very helpful.

"Mr. Imparato's comments about the cumulative impacts I think are really well taken and most of the transit tables, as well as the tables showing the street clogging, need to be redone. I remember 5 Fremont's going down to a level and I just hope that we get a little more accuracy as to what the real situation is going to be, using both the approved things and the proposed buildings.

RESPONSE

The projection of 25,500 peak-hour person trips reflects about 7 million square feet of office development.

Cumulative development impacts are discussed in Section III.1.B., page 153 of this document, Comments and Responses.

Page 57 of the EIR has been revised to read as follows:

"... Based on these projections, the total peak hour auto travel in the downtown area could also increase by approximately 30-35%, or a total of 12,000 new p.m. peak hour auto trips, as a result of the approved development[1] (see Table 6, page 58). An increase of this magnitude would affect traffic flow. The proposed project would generate 360 p.m. peak hour auto trips, which would be approximately 3-4% of the volumes generated by projects approved but not yet completed in the downtown area. If these increases are applied to the existing peak hour volumes obtained for the Mission/Spear, Mission/Main, Mission/Beale and Main/Howard intersections, the following service levels would result:

	Existing Service Level	Peak Hour Service Level in 1983 without Spear and Main Street Project	With Spear and Main Street Project
Mission/Spear (PM Peak Hour)	A	A	A
Mission/Main (AM Peak Hour)	B	D/E	D/E
Mission/Beale (PM Peak Hour)	C	E	E/F
Main/Howard (PM Peak Hour)	A	B/C	C

"With the addition of office development proposed, but not approved, through October 1981, the intersections of Mission/Main and Mission/Beale would degrade to service level F, while Main/Howard would degrade to service level D. The Mission/Spear intersection would remain at service level A.

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[1]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, June 1980, revised October 1980.

"In addition to a degradation in the quality of traffic flow on surface streets as a result of the cumulative development, the freeways and freeway ramps would be critical links in the overall network. With the freeways currently operating under congested conditions during peak hours, the traffic increases generated by cumulative downtown development would add to this congestion, with the likely result that travel delays would be extended. Traffic delays would probably increase in proportion to the increased trip generation of the downtown area. The 30-35% increase in trip generation attributed to approved downtown development would therefore add 30-35% to peak hour delays. As further development occurs, the peak hour traffic flows could be extended over a 2-3 hour period.

The following is added at the end of the first paragraph on page 59:

"Environmental review for demolition of The Embarcadero Freeway is expected to begin by mid-1982. No schedule has been adopted for demolition of the Freeway."

The following is added to the bottom of page 107 of the EIR:

"The following mitigation measure could be implemented by the City:

12. The traffic code would be amended to make it illegal to enter an intersection until there is clearance outside of the intersection."

IV. ECONOMIC AND FISCAL

1. Employment and Housing

A. Setting

COMMENTS

Calvin Welch

"Page 52b, table 5b, purports to outline the housing prices in San Francisco as of 1980. The source that is cited for this document is the Housing Element of the Master Plan of the City and County of San Francisco, which is presently undergoing massive review by your staff.

"The data struck me as curious and strangely bizarre in terms of the dollar amounts for the units. I eagerly turned to the purchase prices of single family homes and was staggered to see that the data used in the Housing Element of the Master Plan, upon which was this was based, was 1979 study done by Gressel, Gressel, Slater, Inc., a consultant firm for the City, who developed a permanent affordability program which the City never accepted, but was based upon that $129,000 STPH-FPLT figure for the new single family home cost, was based upon figures taken directly from Slater and Slater.

"I submit that the figures from the Citizens' Housing Task Force and the Department of Housing and Urban Development are more current and more accurately reflect the reality that is reflected in at least the newspaper of San Francisco and the Chronicle in San Francisco.

"I believe the figures on table 5b should be reassessed.

"On table 5c, the purchase size is very interesting. In 1979 the average single family home costs are $125,000.

"In a survey done by the San Francisco Examiner, Jack Miller in the Business Section on July 5, 1981, surveying the current multiple listings in San Francisco, picked a typical single family home price in San Francisco July 5, 1981, 3 bedrooms, 2 bath, as being $211,500, which is considerably in excess of $129,000.

"That is from the San Francisco Examiner from the multiple listing, from a survey done of multiple listings."

Michael A. Visconti

"We request that the Final EIR include the source of the average sales price data used in the analysis (Table 5b, page 52b). By contrast with other available data, the price levels seem very low. The Northern California Real Estate Report, published by the Real Estate Research Council of resi- Northern California, surveys the market value of representative residences. For 1980, the average market value of 28 representative existing single-family homes in San Francisco was $143,857, fully 60 percent higher than the average sales price of $89,590 for existing single-family homes, and 11 percent higher than the average sales price of new single-family homes used in the Draft EIR. Depending on the reliability of the source data used, the percentage of Spear and Main office building employees who will be able to afford to purchase housing in San Francisco (Table 5c) may be much lower than that reported in the DEIR."

Commissioner Bierman

"Pages 52a, b and c are just so unrealistic that I couldn't even believe them. I don't know where you find any housing, particularly to buy it, at these prices. I don't know where those come from."

Calvin Welch

"On table 5c, the purchase section dealing with what we can assume are converted units of condominiums.

"The notion that you can purchase a unit in San Francisco in a converted building, condominium unit in a converted building for an average of $582 a month total housing cost is simply not borne out by the facts of your own department.

"If you would, check the submissions of your own department to the Citizens' Housing Task Force on the average monthly cost of condominium conversions, you will find them in excess of $1,000 a month, not $583 a month, as this item indicates."

"In March of this year, the Mayor's Office of Community Development for San Francisco reported that HUD reported that the market rate rents in San Francisco under the Section 8 program were as follows:

"$512 a month for a studio, $612 a month for a 1-bedroom rental unit, $782 a month for a 2-bedroom rental unit, $961 a month for a 3-bedroom rental unit, and $1,104 a month for a 4-bedroom or more rental unit.

"I took a look at the December 8 Chronicle, and for studio apartments the average cost of those advertising was some $300 -- excuse me was some $365, not $292.

"On page 52b of the Draft Environmental Impact Report, the preparers of the report assert that average monthly rent for studio apartments in San Francisco in 1980 is $292. That a 1-bedroom is $382, 2-bedroom $572.

"The rentals, average monthly rentals, and then on page 5c the purchase prices and housing type, various monthly housing costs, also seem curiously out of kilter.

"The Citizens' Housing Task Force addressed the question of costs of rental units in San Francisco from the point of view of what would it cost to build a rental unit today and came up with the following figures on table 19, page 76, of the report of the Citizens' Housing Task Force, that the studio apartment would have to rent at $690 a month, assuming a 13% mortgage -- $690 a month for a studio. A 1-bedroom at $995 a month and a 2-bedroom unit at new construction costs $1,340 a month.

"In a survey done by the Duboce Triangle Neighborhood Association and published in the San Francisco Progress earlier this year, 1981, the survey consisted of 249 converted units. It was done in the last half of 1980.

"The average monthly housing cost in that survey of 249 condo conversion units was $2,090 a month and the average purchase price for a condo of a converted unit was some $235,000.

"I submit that your own staff could supply more accurate and clearly larger figures on the costs of condominium ownership in San Francisco than is reflected in table 5c."

RESPONSE

The housing purchase price data presented in Table 5b, page 52b, were developed from data reported by the California State Department of Savings and Loan. These reports reflect mortgage origination activity by all state-licensed savings and loan associations. The data reflect sales activity in 1979.

Table 5b has been revised to reflect 1981 data. In particular, the Department has reported information specifically for condominiums, which has been substituted in the Tables for the data on 2-4 unit buildings.

The results of the 1981 City Planning Department Rent Survey have recently become available and have been incorporated into Tables 5b, 5c and 10a (pages 180, 181, and 210 in the Comments and Responses). The information is based on a newspaper survey which is not a statistically valid indicator because it does not sample a reliable representation of rental units on the market for several reasons: many rental units never get advertized in the paper, the survey was made only for a given day, and rental units advertized tend to be more expensive than the actual average market rate.[1]

The 1980 census provides a complete survey of all rental rates in the City, however, the preliminary data available does not provide costs by size of units. Instead, the only information currently available is for median rents for a unit of 4 rooms. This amount was indexed to 1982 in Tables 5b and 10a based on the consumer price index of 15.4%.

The rental data presented in the Citizens' Housing Task Force are hypothetical numbers based upon multi-family construction costs. However, new construction represents a small segment of the San Francisco rental market.

The HUD Section 8 rental data quoted by Mr. Welch also involve new construction under the Section 8 program. The Section 8 rental criteria are based upon data from the 1970 census which has been indexed forward and benchmarked with the Annual Housing Survey. Moreover, these data reflect SMSA averages and do not provide an adequately focused indication of conditions in the San Francisco rental market.

Thus, the HUD Section 8 and Citizens' Housing Task Force rental data allow only a higher generalized and incomplete analysis of the San Francisco city rental market.

The date is changed from 1980 to 1981 which is cited in paragraph 2, page 52, under Employment and Housing (setting) in the sentence beginning, "Table 5b, page 52b, provides an indication..." (For changes in Table 10a, page 103 of the DEIR, see B. Impacts, Response on page 209).

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[1] Rental Library Listing Services in San Francisco provides listings of rental units rates to prospective tenants for a fee. These listings are selective and tend to parallel the newspaper adds which may be higher than the actual market average.

TABLE 5b
HOUSING PRICES IN SAN FRANCISCO, 1981

Rentals: Median Monthly Rent[1]	
Studio Apartment	$ 440
1-Bedroom	500
2-Bedroom	560
3+ Bedrooms	590
1980 Census Median Monthly Rent (median number of rooms is 4.0)[2]	310
Purchase: Average Sales Price	
New Single Family[3]	$ 155,500
Existing Single Family[4]	148,000
Condominium (New and Existing)[5]	112,760
Median value of owner occupied dwelling (median number of rooms of rooms is 4.0)[6]	119,900

[1]Mike Estrada, Department of City Planning, telephone conversation, 17 December 1981. Result of 1981 survey of rental advertisements in the San Francisco Examiner. Newspapers are not statistically valid sources because they are not representative of entire stocks of units, they can, however, provide a general indication of rents.

Two other sources of rental data exist but have been deemed inadequate for the present study: 1) HUD develops rental costs for the Section 8 housing subsidy program. These estimates reflect SMSA data which have been indexed forward from the 1970 census, and benchmarked with the Annual Housing Survey, which is published with at least a year time-lag; 2) the Citizens' Housing Task Force has developed hypothetical rental levels based on multi-family construction cost. However, new units represent a very small segment of the San Francisco rental market.

[2]Based on preliminary date from the 1980 census (100% sample) of $266 in April 1980. Selected Housing Characteristics by States and Counties: 1980, Bureau of Census 1981. The median rent was indexed to 1982 based on the Consumer Price Index of 15.4%.

[3]New single family housing price given in: Department of City Planning Housing Element, Background Data and Need Analysis, revised September 1981, page 3, were indexed from October 1979 to October 1981 according to: Real Estate Research Council of Northern California, Real Estate Report, vol. 33, no. 1, page 8; 1981 index given by James H. Davis, Executive Director, telephone conversation, 17 December 1981.

[4]Real Estate Research Council of Northern California, op. cit., page 4.

[5]Based on average loan amount over the first 3 quarters of 1981, as reported in: California Department of Savings and Loan, "Loan Summary Analysis," line 26. Assumes a 20% down payment.

[6]Based on 1980 Census of $103,900 for median owner-occupied housing price indexed to $119,000 for 1982 based on the Consumer Price Index of 15.4%.

TABLE 5c

PERCENT OF OFFICE WORKER HOUSEHOLDS ABLE TO AFFORD VARIOUS MONTHLY HOUSING COSTS, 1981

Housing Type	Median Monthly Cost	% Able to[2] Afford Cost
(Rental)		
Studio Apartment	$ 440	75-77
One Bedroom	500	70-73
Two Bedroom	560	66-69
Three or More Bedrooms	590	66-69
(Purchase)		
New Single Family	1,570	13-16
Existing Single Family	1,497	16-18
Condominium	1,140	22-24

[1]Housing costs derived from Table 5b; rental costs as given, monthly housing expenditure for purchase assumes 20% down payment, 15% mortgage interest, 30-year mortgage.

[2]Interpolated from Tables 5a and 5b.

COMMENTS

Calvin Welch

"That vacancy rate question is an important assumption of the drafters of the EIR. It is an inappropriate assumption that is not supported by the facts that the housing market in San Francisco, especially of rental housing stock, is extermely tight, and that the assumption, without any substantial support, that 100 percent of the work force of any office building can accommodate their housing needs in the rental market in San Francisco is simply untrue.

"The Citizens' Housing Task Force in its final report spent much effort and time in coordination with your staff in trying to measure the vacancy rate in San Francisco. And this is more pertinent. And the data for housing costs and vacancy rates in the Citizens' Housing Task Force Report should be used as a matter of course in EIRs.

"Citizens' Housing Task Force developed a methodology of actually surveying non-used Pacific Gas and Electric meters as perhaps the most reliable way to measure vacancy in residential units.

"Their figure is that in April of 1980 there was a 1.41 percent vacancy rate in San Francisco, which is more consistent with a report issued by ABAG in April of 1981, that indicated in the region there was a 2.4 percent vacancy rate and generally conceded that San Francisco's housing market is a little tighter than the average Bay Area housing market, 9 Bay Area county housing market.

"The people who developed this Environmental Impact Report have thrown up their hands above availability. The 5.6 percent vacancy figure was challenged by your own Director of City Planning as being totally untrue and misleading when Mr. Adams reported there was this huge vacancy rate in San Francisco. A letter to the editor of the San Francisco Examiner by your Director of City Planning pointed out the 5.6 figure was an inflated figure. He did not have the accurate figure, but he was sure that it was lower."

Carl Imparato

"On page 52 there is a statement that the estimated vacancy rate for housing units in San Francisco is 5.6 percent. That seems high to me. I recall that it was a lot lower. So can we just see a discussion on that."

RESPONSE

The following paragraph will be included in footnote 2, page 52:

"The 5.6% vacancy rate is reported by the Bureau of the Census and is currently used by the City Planning Department although Planning Director Dean Macris has requested that the Bureau revise its estimate since other indicators suggest the vacancy rate should be lower. (Joan Carson, Planner, San Francisco Planning Department, telephone conversation, 29 December 1981. The methodology employed by the Bureau of the Census included all housing -single family units, apartments, etc.- which tended to skew the rate for apartments. In addition, the inquiry techniques by the Bureau regarding occupancy could have overinflated the vacancy rate.) A new Census estimate is anticipated by February 1982. Data on idle meter counts reported by the Citizens' Housing Task Force (The Report of the Citizens Housing Task Force, San Francisco, July 1981, pages 44-47) and the results of a postal survey sponsored by the Federal Home Loan Bank Board (Real Estate Research Council of Northern California 1981 Mid-Year Real Estate Report. September 1981, Vol. 33/No. 2, page 40) indicate that the overall vacancy rate may lie between 1.4% and 0.8% for 1980."

COMMENTS

Calvin Welch

"What are the labor force economic figures for this particular project?

"What we get in table 5a on page 52a is a reprint of a 1975 table, updated by inflating the supposed income of the work force by 60 percent. Why 60 percent? Why not 75 percent or 90 percent or 19 percent?

"What relationship the SPUR study done in 1975 has to this specific project and this specific work force, we are not told.

"Table 5a implies that some 35.1 percent of the Spear/Main work force, will receive from under $12,800 to $15,999 a year.

"That is the inference one is expected to make from table 5a, which is not described in the work force of Spear/Main.

"But if you turn to page 100, on estimated project revenues at full occupancy, footnote 2 estimated that 60 percent of the employees are going to be earning $18,000 or less.

"Yet, table 5a indicates that 35.1 percent of the work force is going to be receiving $16,000 or less.

Carl Imparato

"There is a table on page 52a, with income ranges for office workers. In order to apply that data to the project itself, you need to have an estimate of the number of the project's future occupants who fall in the various income categories."

RESPONSE

Since specific tenants of the project have not been indentified, it is impossible to determine the exact incomes of the persons who would be employed in the project. We may expect, nonetheless, that the income distribution for the projected building's work force would be similar to that for the other office buildings' workers in the San Francisco downtown. Thus, a survey of office worker income in the downtown area would provide a good indication of the levels of income the employees of the proposed building would receive. The 1974 SPUR survey serves such a purpose. There has been no other survey of office worker income done in San Francisco recently, and there is no other current source of information on downtown workers. Accurate income information for the City as a whole will not be available until the 1980 census data is published. To analyze SPUR data in relation to current housing prices, the 1974 distribution has been indexed forward to follow the growth in income among all office workers in the Bay Area as reported by the U.S. Department of Labor (see Table 5a below for citation). The income of office workers in the Bay Area increased 78% between 1974 and 1981. Table 5a has been revised to reflect 1981 income levels. Thus, the numbers presented in Table 5a represent the distribution of income in the San Francisco downtown assuming the income of workers here have kept pace with those of workers in similar occupations throughout the Bay Area. In the first paragraph under Employment and Housing, page 52, the figure "$25,000" is changed to "$17,800" in both places it occurs.

Table 1, page 186 compares income distribution of clerical office workers generated from the SPUR study using the methodology described above with data from the Annual Wage Survey for the entire San Francisco - Oakland Metropolitan area. The SPUR distribution is spread more evenly in the below $26,700 ranges, but the fact that more than 90% of clerical workers earn less than that figure remains true for both distributions. It is expected that San Francisco downtown employees would exhibit a somewhat higher

income level due to the concentration of headquarters operations there. Similar current wage information for other occupational groups is not available for comparison with the SPUR data.

COMMENT

Carl Imparato

"The analyses on pages 52 and 54 on this Draft EIR, which purport to show that all office workers' households could afford housing in the City obscures the fact that housing is not available for the number of office workers associated with cumulative growth."

RESPONSE

The following sentence is added to paragraph 3 under Employment and Housing on page 52:

"Table 5c does not reflect availability of housing, just affordability."

COMMENTS

Carl Imparato

"The housing setting section doesn't bring forth the very strong connection between downtown office development and the City's housing problems.

"Page 88 of the 5 Fremont EIR is very explicit. It says, 'The expansion of downtown office space provides one of the main sources of pressure on San Francisco's housing demand.'"

John Elberling

"The Setting sections of the Second and Folsom and Spear and Main DEIR's should be as extensive in scope as the 5 Fremont Center FEIR, including sub-sections on regional housing supply/demand/trends, and jobs/housing imbalance.

"The amount of housing produced, net, by size (vs. household size), by type (condominium-sale or rental), and by price range needs to be stated for several recent years, and for each of the Bay Area counties."

TABLE 1

INCOME DISTRIBUTION OF CLERICAL WORKERS IN
SAN FRANCISCO DOWNTOWN AND
SAN FRANCISCO-OAKLAND METROPOLITAN AREA

	Under 14,240	14,240 17,799	17,800 26,699	26,700+	TOTAL
SPUR Survey[1]	39%	30%	22%	9%	100%
Annual Wage[2] Survey	63%	19%	17%	1%	100%

[1]The income data are based on raw data from a survey of 449 office clerical workers in San Francisco highrise buildings conducted in April 1974 for the SPUR Study. In 1981 income ranges were developed by inflating the 1974 ranges by 78%. This represents the mid-point of the range of increases for office related occupations as given in U.S. Department of Labor, Area Wage Survey: San Francisco: Oakland SMSA, Washington, D.C., March 1981, page 12.

[2]U.S. Department of Labor, Area Wage Survey: San Francisco-Oakland SMSA, Washington, D.C. March 1981, page 15.

TABLE 5a

Income Ranges for Office Workers
in Downtown High-Rises 1981

Occupational Distribution	Individual Income Distribution (salaries and wages)[1] Under 14,240	14,240 17,799	17,800 26,699	26,700 35,599	35,600 44,499	44,500 88,999	89,000+	
Professional and Technical	6%	11%	34%	51%	50%	37%	42%	
Manager and Proprietors	1	4	14	23	40	49	50	
Clerical	92	81	44	14	4	4	1	
Sales	1	2	5	10	5	7	4	
Others	--	2	3	2	1	3	3	
TOTAL	100%	100%	100%	100%	100%	100%	100%	
% of Individuals in Range[2]	18.6%	16.5%	22.4%	19.1%	10.4%	10.7%	2.4%	100%
% of Households in Range	15.1%	8.9%	15.2%	20.3%	16.8%	20.3%	3.3%	TOTAL 100%

Source: EIP; San Francisco Planning and Urban Renewal Association, Impact of Intensive High-Rise Office Development-Detailed Findings, Table 21, page 117 (1975).

[1]The income data are based on raw data from a survey of 1,022 office workers in San Francisco high rise buildings conducted in April 1974 for the SPUR Study. In 1981 income ranges were developed by inflating the 1974 ranges by 78%. This represents the mid-point of the range of increases for office related occupations as given in U.S. Department of Labor, Area Wage Survey: San Francisco-Oakland SMSA, Washington, D.C., March 1981, page 12.

[2]The survey asked each respondent to indicate his/her income as well as household income.

RESPONSE

A fourth and fifth paragraph will be added to the Employment and Housing section on page 52 as follows:

"The expansion of downtown office space provides one of the main sources of pressure on San Francisco's housing demand. Regional housing impacts are also experienced. A discussion of regional and San Francisco housing characteristics is included in the Five Fremont Center, Final EIR EE 80.268, certified on 12 March 1981, pages 41 and 42 and is hereby incorporated by reference into this EIR.

"The limited information available on housing production in the Bay Area counties suggests that the markets have been depressed in recent years. Regionally, single family permits, as shown in Table 5d, declined in 1979 and 1980. Alameda, Contra Costa, San Francisco, San Mateo and Sonoma county permits issuances rose from 1978 to 1979, but then also declined in 1980. A similar pattern is exhibited in Table 5e for multi-family permits, with the exception that condominium permits increased steadily through 1980. Rental permits in Napa and Santa Clara counties also rose in 1980."

B. Employment and Housing Impacts

COMMENTS

David Jones

"Property taxes in the EIR are $300,000 a year in 1980. If you assume property taxes go up by 2 percent a year, but that the costs of City services will go up at a rate of inflation of about 10 percent a year, 20 years from now the Muni cost in this building alone, given EIR figures, is $971,000. The property taxes will be $444,000. That is just Muni.

"This EIR also says it's difficult to determine the cost of police, fire, roads, public services, so it uses the number zero.

"I confess that when you use the number zero just because something is difficult to determine, you are vastly underestimating the true cost of these services.

"The Arthur Anderson study tried to estimate the cost of downtown on a per square foot basis. Even if these numbers, which we think are too low, were used, you would find a significant cost for police, fire and public works like roads, traffic policemen, things like that, which would be attributable to this building.

TABLE 5d

SINGLE FAMILY PERMITS ISSUED
BY COUNTY FOR SELECTED YEARS

	1976	1977	1978	1979	1980
Alameda	2,971	3,453	4,052	4,129	2,743
Contra Costa	6,122	9,059	5,193	5,557	4,566
Marin	857	894	1,154	694	751
Napa	546	658	627	337	320
San Francisco	312	369	227	239	190
San Mateo	1,813	2,193	1,185	1,685	1,201
Santa Clara	9,318	8,446	6,999	6,098	5,071
Solano	3,032	4,707	3,483	2,773	1,724
Sonoma	3,163	3,627	2,456	3,069	1,779
Region Total	28,134	33,406	25,376	24,581	18,345

Source: ABAG San Francisco Bay Area Housing Activity Report No. 3, May 1981, pages 20-24.

TABLE 5e

MULTI-FAMILY PERMITS ISSUED
BY COUNTY FOR SELECTED YEARS

	1976		1977		1978		1979		1980	
	Rentals	Condos	Rentals	Condos	Rentals	Condos	Rentals	Condos	Rentals	Condos
Alameda	803	102	1,237	20	1,985	480	1,496	718	1,038	1,022
Contra Costa	1,026	0	1,325	20	1,415	0	387	614	240	
Marin	232	156	336	227	679	118	151	25	92	87
Napa	170	82	306	108	248	73	35	0	110	0
San Francisco	1,310	0	1,167	0	1,818	0	1,394	200	549	463
San Mateo	820	252	1,449	197	1,130	343	697	185	424	682
Santa Clara	3,695	138	4,104	377	2,807	214	1,382	556	2,627	327
Solano	142	0	652	59	701	137	684	61	490	64
Sonoma	601	0	1,168	77	948	0	890	109	280	303
Region Total	8,799	730	11,744	1,085	11,731	1,365	7,116	2,242	6,224	3,188

Source: ABAG, San Francisco Bay Area Housing Activity Report, No.. 3, May 1981, pages 20-24.

"This EIR, rather than saying they are difficult to determine, should use assumptions to at least come up with some number larger than zero, so there can be a fair analysis of what happens."

Carl Imparato

"Page 101, we see what the folly is of refusing to do a cumulative impact analysis regarding the demand for community services. The EIR states that cumulative costs, page 101, 'could' increase due to servicing downtown growth. And we think 'would' increase is certainly a much more reasonable word to use.

"The EIR states that cumulative costs could increase due to servicing downtown growth, but they would not increase due to the proposed project. So no individual projects are responsible for any increased police force, police costs, but then all of a sudden, the residents are stuck paying for extra police protection and traffic cops. They have to have cumulative impact analysis.

"Several of the remaining statements in the fiscal analysis indicate a definite bias we feel inappropriate. The draft states, page 102, 'Cumulative fiscal effects of development in the downtown area are difficult to quantify...Several studies have been done and the results differ...' Okay, fine, they are difficult to quantify.

"No data is given anywhere to support then the statement, which is on page 12 of the summary, that it would be expected that project revenues to San Francisco would exceed the incremental costs directly attributed to the project. No data supports that, so why is that statement in the draft EIR? We feel it should be removed and changed to just a simple statement acknowledging that it is not known whether revenues would exceed costs in the short run.

"Page 101, we ask why could it be assumed that proposed revenues would exceed costs at the time of occupancy? There is no data. That statement should be removed, we think."

"Page 102, the statement is made 'due to limitations imposed by Prop. 13 on property tax increases, revenues may not increase proportional to inflationary increase in City costs.' They say due to Prop. 13, the revenues 'may not' increase proportional to the costs.

"Do the authors of the EIR think inflation will fall down to 2 percent, which is the level Prop. 13 allows in terms of increases. The 'may not' should certainly be a lot stronger. The words 'probably would not' should be substituted there.

TABLE 10

Estimated Project Revenues at Full Occupancy
(1981 dollars)

	Current Revenues	Total	Gross City/County[1]	Net City/County
Property Tax[1]	$25,200	$287,000 to 356,000	$244,000 to 303,000	$218,800 to 277,800
Payroll Tax[2]	--	132,320	132,300	132,300
Sales Tax[3]	--	98,000 to 114,400	15,000 to 17,600	15,000 to 17,600
Gross Receipts Tax[4]	--	18,400 to 24,600	18,400 to 24,600	18,400 to 24,600
Utility Users Tax[5]	--	11,200	11,200	11,200
	$25,200	$546,400 to 638,500	$420,400 to 488,700	$395,600 to 463,500

[1]Assumes property tax distribution as in 1980-1981; it may be slightly different in the ensuing years. The San Francisco Unified School District and Community College District, Bay Air Quality Management District and BART would also receive property tax revenues. The ranges are based on 4% (under Proposition 13) and 0.97% (based on bond payments), which will change in several years.

[2]The business tax is actually comprised of 2 taxes: gross receipts tax and payroll tax. Revenues from these taxes would be generated by businesses which occupy the project and by owners of the project who would pay a tax on the rents they receive.

Business tax revenues have been estimated at $487,000 for every million square feet of office space in the following studies: Gruen Gruen + Associates, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, March 1981, page 116 and Arthur Anderson and Co., Downtown Highrise District Cost Revenue Study, November 1980, pages 35-38. These estimates were based on actual tax collections by the City for the C-3-0 District divided by an estimated 39 million square feet. The calculations for Spear and Main are based on 271,600 gross square feet of office space times $487,000 divided by $1,000,000.

These sources are used in this report because they are the only recent estimate of business tax revenue collections relevant to new downtown office buildings. (The SPUR Impact of Intensive High-Rise Development on San Francisco, June 1975, pages 246-248 would estimate: 1,090 x $25,650 mean payroll per employee updated to 1980-1981 dollars x 1.5% tax rate x 55% probable tax revenue = $230,600.)

[3]Estimated on 6½% of sales tax; San Francisco collects 1%.

[4]Based on net rentable space at $30 to $40 per square foot at the rate of $2.20/$1,000 of gross rental receipts.

[5]Water. The estimated annual water bill for the completed project is $18,800 ($1,202,000 cubic feet/year @ 41.4¢/100 cubic feet, plus $1.15 sewer service charge/100 cubic feet). Tax @ 5% = $940.00.

PG&E. The total annual PG&E bill is estimated at: $141,40 for electricity (@4.5¢kwh) and $2,000 for gas (@29¢/therm). Totals based on annual consumption figures projected in Section III.I, Energy Impacts. Tax @ 5% = $7,200.00.

Pacific Telephone. The estimated annual telephone bill is $51,500, a figure which would vary considerably with the type of office tenant. This estimate assumes a monthly telephone bill of $1,000/5,000 leasable square feet. Tax @ 5.5% = $3,100.00.

Total Utility Tax = $11,200.00.

"The 101 Montgomery EIR states,' in the long run, revenues from the project would increase at a slower rate than costs due to Prop. 13 limitations.' Not 'could,' 'would.'"

RESPONSE

The calculations for payroll tax in Table 10, page 100 in the DEIR have been revised to reflect a different methodology. Table 10 has been revised on the next page.

The Municipal Costs and Net Revenues Section, pages 101 and 102 of the DEIR have been deleted. Inserted in its place is the following:

"Costs Other Than Muni

"Since 1979, a number of studies have analyzed 1 aspect or another of downtown area's impact on the City's fiscal health. Only 1 of these studies, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco (Gruen Gruen + Associates, March 1981), developed estimates of the additional public service costs of new development.[1] In this study, the consideration of costs was limited to the direct costs of services provided within the physical limits of the C-3-0 district. These cost figures are used in this EIR to provide an indication of the direct costs that would be attributable to the project for increased public services other than those associated with Muni. While a broader definition of costs could result in higher cost estimates, the direct

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[1]Studies done by Arthur Anderson & Co. (Downtown High Rise District Cost Revenue Study, November 1980) commissioned by the San Francisco Chamber of Commerce and by David Jones (Downtown Highrise District Cost Revenue Study, February 1981) prepared for San Franciscans for Reasonable Growth examine the fiscal impact of the existing downtown. The 3 other studies address the question of what the fiscal impact of new development would be (Gruen Gruen + Associates, study cited above; Sedway/Cooke et al., "Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, October 1979; and Recht Hausrath & Associates, "Final Considerations," Appendix C, 101 Montgomery Street FEIR EE 80.26 certified 7 May 1981). Of these 3 only the Gruen Gruen + Associates study developed estimates of the additional service costs associated with new development. (See 101 Montgomery FEIR (EE80.26) pp. 191-196 for a summary comparison of these 5 fiscal studies.)

costs defined here represent a large part, if not all, of the relevant costs of new development.[1]

"The costs of the project would depend, in part, on the timing of the project in relation to other new projects in the City. This is because at various levels of cumulative development, service thresholds are met that require large capital expenditure. For the purposes of this analysis, it is assumed that the proposed project would be completed after the additional 10 million square feet of office space to the 1980 amount downtown, but before the addition of 15 million square feet.[2]

"Direct public service costs for fire, police, public works, general government, and other services have been estimated to be $0.227 per net addition of 1 square foot

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[1]The main area of possible disagreement with the costs from the Gruen Gruen + Associates study is likely to involve the definition of costs. For example, David Jones' study criticized the use of a similar "direct cost" definition in the Arthur Anderson study, saying that downtown shold pay for services provided outside the C-3-0 area as well (noting Citywide recreation and cultural facilities like Golden Gate Park and the Performing Arts complex as examples). There has not been a study that identifies how new downtown development affects costs for these services. Nor is there agreement on definitions or an accepted methodology for how this should be done. Recognizing potential dif-ferences in definition, it is still possible to consider the direct costs defined here as at least part, if not all, of the relevant costs of new development. (Also see 101 Montgomery Street FEIR, EE 80.26 p. 310 and pp. 314-315).

[2]As shown in Table 10b about 10 million square feet will be added downtown when all of the projects approved as of November 1981 are built. Thus, it is reasonable to evaluate the proposed project as among those that could be built in the subsequent 3-4 million square feet of projects that are under review by the City, telephone conversation with Lu Blazej, City Planning, 25 January 1982.

of downtown office space.[1] The project would result in a net addition of 271,600 square feet of space. The net increase in direct costs (excluding Muni and BART) resulting from the project would be $61,700 (1980-81).

"MUNI

"Marginal capital and operating costs per peak period Muni ride are $0.7067.[2] Because the fare revenue per passenger

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[1]Gruen Gruen + Associates, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, March 1981, p. 99. From the figures in Table III-42, p. 99, total additional direct service costs related to the 5 million square feet after 10 million square feet have been added to the 1980 stock downtown equal $1,494,031. This figure, minus the additional cost for Muni of $357,690, equals the direct costs of $1,136,341 for services other than Muni. This amount divided by 5 million square feet equals the cost per square foot of $0.227. (The costs for Muni are excluded here because the PUC staff has since developed more current Muni cost estimates.)

These additional direct costs generated by new downtown development were estimated on the basis of interviews with agency staff and from examination of the Arthur Anderson & Co. study of current downtown service costs, of computer print-outs from City departments, and from City budgets and appropriations documents. Cost estimates assume that current service levels downtown would be maintained as the amount of building space increases.

[2]Bruce Bernhard, "The Marginal Cost of Peak Period Muni Passenger Trips Per Unit of Office Space," San Francisco Public Utilities Commission, February 1981. "Marginal" costs represent the costs per additional peak period passenger trip. The relevant measure of the impact of the proposed project is the additional or marginal cost per passenger trip generated during peak hours. This cost estimate (in 1980-81 dollars) includes operator labor, maintenance labor, fuel or power, other direct operating costs, parts, and amortization of incremental vehicles (expressed as a weighted average of modes). This estimate includes the marginal costs incurred by added passengers from a new downtown building. It does not allocate any incremental facilities costs (garage space or storage), nor any incremental supervisory staff costs, although such costs would also be incurred at some level.

trip is $0.3181,[1] the net marginal cost (or increase in the deficit) per peak period ride is $0.3886.[2] The transportation impact section (page 65) estimates there would be 290 afternoon peak transit trips on Muni. Doubling this for morning plus afternoon peak trips, there would be 580 peak hour Muni trips per day. This increased demand for Muni services would cost $58,600 (1980-81 dollars).[3] (Because the existing site is vacant, it creates no cost for Muni and so the net increase in costs, or deficit, would also be $58,600.)[4]

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[1]See Footnote 2, page 196, Fare revenue per passenger trip is estimated assuming only adult riders, 85% of whom are estimated to use passes at a net marginal revenue of $0.286, and 15% of whom pay cash for a net marginal revenue of $0.50.

[2]Bruce Bernhard, "The Marginal Cost of Peak Period Muni Passenger Trips Per Unit of Office Space," San Francisco Public Utilities Commission, February 1981.

This estimate differs from those used in previous EIRs. The 101 Montgomery Street FEIR (EE 80.26 certified 7 May 1981) pp. 85-86 and 316-318 identified the average 1980-81 general fund deficit per ride taken with a Fast Pass at $.029. This figure did not include any capital costs. In that analysis, it was noted that while this figure was the best available estimate, it is not a good measure of the costs of providing additional Muni service downtown. Since then, the PUC staff has developed new cost information to estimate the additional or marginal costs. The net marginal cost (or increase in the deficit) per additional peak period trip of $0.3886 (1980-81 dollars) includes the capital cost for vehicles. The more recent figures were developed as part of the transit development fee cost analysis.

[3]580 peak rides per day x 260 work days per year x $0.3886 cost per ride = $58,600.

[4]The project would also help to pay for the Muni deficit through its revenue contributions to the general fund. In the 1981-1982 budget, 7% of the discretionary general fund revenues were allocated to Muni.

"BART Costs

BART fares cover about 43% of BART costs.[1] For each BART passenger trip an average of $1.00 is contributed in fares, and an additional $1.33 in costs must be supported by some other revenue source. It is estimated that about 151 employees in the new building would ride BART to work. The project would generate a deficit of about $77,300 in 1981 dollars.[2]

Direct Costs and Revenues

The proposed project would increase the general fund revenues to the City by about $395,600 to $463,500 (1983 dollars). Direct costs within the downtown area for increased services other than Muni could increase by about $61,700. Costs to the City's general fund for increased Muni service downtown would increase approximately $58,600. A proposed Transit Impact Fee could lower this amount depending on the rate of return (assuming that the fee is implemented and that there is no state or federal aid to cover vehicle capital costs).[3]

Comparing these figures indicates a net revenue increase of about $275,300-$343,200 to San Francisco. While the accuracy of the estimates could be debated, this comparison indicates that a net revenue increase would still result for the short term even if the direct cost estimates here were considered low by a factor of 100% or more. It also indicates that there would be revenue to offset other costs in addition to the direct costs included

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[1] Department of City Planning, 101 Montgomery EIR, EE 80.26, Certified 7 May 1981, page 42.

[2] 302 rides x 260 working days x $1.33 = $104,300 = $21,500 (estimated contribution of property tax at 6.3% of $1.19 tax rate per 1% assessed value) - $5,500 (estimated ½% sales tax revenue to BART) = $77,300.

[3] The transit development impact fee became law in San Francisco on 5 June 1981 (Ordinance 224-81); however, the legality of this Ordinance is being challenged and is currently pending in San Francisco Superior Court and the fee is not being collected.

here, if other definitions of increased costs are used. Alternatively the net revenue increase could be viewed as funds available for City services other than those directly provided in the downtown area.

"Long-Term Fiscal Impact[1]

Though the project would generate revenues in excess of the direct costs it imposes initially, the difference between costs and revenues would narrow over the years. This is because costs can be expected to rise with inflation, while revenues would grow more slowly as a result of the Proposition 13 limitation on property tax revenue growth to 2% per year unless a property is sold. Other revenue sources would grow at inflation. If all current sources of revenue associated with the proposed project are held constant (i.e. fees and rates do not change and no new assessments levied) costs would eventually exceed revenues."

COMMENTS

Carl Imparato

"Page 102 refers to page A-24, (the) very last page in the EIR, where there are several studies that have been done on the downtown fiscal issue. In the interest of exposing possible bias of those studies, we think that the backers, the funders for those studies, should be very clearly stated on page A-24. That study was funded by the Chamber of Commerce, which is certainly not an unbiased observer. That should be noted on that page.

"The Sedway/Cooke study was funded by City Planning, and for all the other studies, it should be noted what interest is involved and who was backing those studies."

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[1]The conclusions here as to direction of fiscal impact are similar to the generalized conclusions in previous EIRs. (See particularly 101 Montgomery Street FEIR (EE 80.26), pp. 82-88 and 309-326.) For comparison, the 3 recent fiscal studies which considered whether the City's fiscal situation would be better in the future with or without new development answered as follows: (1) probably better (Appendix C in 101 Montgomery Street FEIR); (2) apparently better (Gruen, Gruen + Associates study); and (3) no, unless new revenue sources are found (Sedway/Cooke study, done before the Transit Development Fee was initiated). (For more comparisons, see p. 196, 101 Montgomery Street FEIR, EE 80.26).

RESPONSE

The Sedway/Cook study was funded by the Department of City Planning.

The Arthur Anderson & Co. study and the Gruen Gruen + Associates study was funded by the San Francisco Chamber of Commerce.

The Appendix C in the 101 Montgomery EIR was prepared by Recht Hausrath & Associates and paid for by the project sponsor. The Department of City Planning assumes authorship for all certified and approved City EIRs.

The David Jones Study was prepared under the auspices of San Franciscans For Reasonable Growth.

Table 2, page A-24 in the EIR has been revised to contain the above information.

COMMENTS

David Jones

"There are more than 500,000 jobs in downtown San Francisco and the surrounding area. Assuming that there is a 10 percent turnover rate every year in jobs, there are 50,000 office jobs that are created every year just by turnover in existing developments. You don't build one new highrise. 50,000 new jobs are created if you assume a 10 percent turnover rates.

"Those are the clerical skills, manager skills, that are in the office type of buildings.

"How many people each year graduate from San Francisco high schools, San Francisco Community College or San Francisco residents who are unemployed that have those skills?

"I think it will show that there are probably less than 10,000 people a year with those skills who are looking for jobs. And existing turnover alone in existing highrises creates 50,000 job opportunities.

"I don't want it to look like we have to build these highrises because people out here can't get jobs. The people that have the skills and want to work at secreatry salaries, they can find a job. Look at the advertisements of the placement agencies who teach those skills and talk about they find 98% placement.

"I think this Commission does not have before it an EIR that lets you know or discuss that subject, whether this creates any additional new job opportunities for San Francisco residents.

"I think what I would like to see is a discussion of what is the turnover in existing jobs, how many jobs are created with existing development how many people of San Francisco who are looking for jobs each year possess these skills? Can you make an evaluaton of whether this is creating any job opportunities?"

Carl Imparato

"We ask that the Planning Commission take positive action to deal with what we think the most glaring deficiency in this draft EIR, the lack of study of the project's contribution to cumulative impact on employment opportunities for the City's unemployed.

"The draft EIR doesn't discuss employment impact on City residents, doesn't take notice of data developed in the 101 Montgomery EIR. That data said, 'It is estimated that between 5 and 10 percent of the people who become newly employed as a result of job growth in San Francisco will be people who were San Francisco residents before getting their jobs.'

"What would the project and cumulative impacts of cumulative development be on unemployed present-day San Francisco residents?

"What skills do San Francisco's unemployed possess?

"How many of the City's residents will be entering the job market within the next nine years?

"What are the distributions of their skills and education?

"If this Commission is concerned with the problems of unemployment in the City, let's get data into the EIRs and find out what steps need to be taken with these problems."

RESPONSE

The Draft Summary of Comments and Responses for the 101 Mission EIR EE 79.236, certified 27 August 1981 addresses the issue of unemployment in the City and high rise development on pages 22-25. That response is incorporated fully here by reference.

The reference to the 101 Montgomery EIR implies that limited numbers of new job opportunities would exist for San Francisco residents as a direct result of new office construction. The section referred to reads:

> "It is estimated that between 5 and 10% of the people who become newly employed as a result of job growth in San Francisco will be people who were San Francisco residents before getting their jobs. These are people who would either have not worked or have worked outside San Francisco before getting their job in San Francisco."[1]

The estimated range was developed based on several assumptions outlined on pages 300 and 301. The 5-10% figure is a judgmental estimate based on consideration of local patterns of job growth, population change, and increases in labor force participation and on the reasonableness of possible estimates. To be more accurate would require data on in-migration, out-migration, workers retiring, workers changing jobs, regional housing and employment growth, and many other factors.

It is likely that the group in the 5 and 10% range that have not worked would have employable skills, or job training programs exist that could qualify them for employment. Most of the job openings in the City are previously existing jobs from which someone has quit or been fired. Only a small percentage are new jobs. Pages 289 to 294 of the 101 Montgomery EIR discuss turnover in existing jobs (estimated at 15%); however, the types of jobs, skill levels and numbers of people who apply for such jobs are not known.[2] An estimate of 91% of the people who obtain new jobs each year will be people previously employed elsewhere in San Francisco.[2]

The youth labor force in San Francisco between 16-21 years old is estimated to be about 32,000. The current unemployment rate is projected to be 15.5% (4,960) in 1982.[3] The skill levels of the population group is not known.[4] The secondary school enrollment for fall 1979 was 28,400.[4] The number of graduates who will enter the labor market, their skills and job interests is not known.

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[1] 101 Montgomery EIR, EE 80.26, certified 7 May 1981, page 301.

[2] Ibid, page 289.

[3] State of California, Health and Welfare Agency, Employment Development Department, Employment Data and Research, Coastal Area Labor Market Information Group, Annual Planning Information, San Francisco City and County, 1981-1982, page 75.

[4] Ibid, page 76.

COMMENTS

Commissioner Bierman

"It doesn't seem to me that we do cover what kind of blue collar jobs will be produced in this building. There is so much talk about south of Market, the loss of blue collar jobs, and it does seem to me that sometimes that may be inaccuarate, because we may be producing more.

"And none of that data is in here for this building."

Carl Imparato

"On page 53 and on page 6 of the Summary, the statement is made that the trend of office development in the South of Market may contribute to spillover effects, such as the displacement of employment.

"We think that this is very, very weakly worded, far too weakly worded. Office development in the South of Market is an will continue to drive out blue collar jobs through the economic pressures which they generate.

"We would like to know, how much office development is currently under construction, approved or proposed for the South of Market and China Basin areas, including warehouse conversions. And we would also like to know where those projects are vis-a-vis blue collar land uses.

"The final EIR could have a map which would show where the blue collar land uses are and all the proposed projects are."

RESPONSE

Project construction would provide short-term blue collar jobs. Full-time service jobs (janitorial, mechanical repair, etc.) would be created by the proposed project directly and indirectly. On page 98 of the DEIR, an estimate of one security and one maintenance worker per 12,500 square feet is calculated that could generate approximately 26 workers. These jobs could be classified as "blue collar."

The San Francisco Department of City Planning has just completed a major study of the South of Market Area that inventories all land use outside the C-3-O District, including the type of land use, number of employees and length of stay at present

locations.[1] Specific information on individual land parcels will not be available until the end of February or beginning of March 1982. The actual number of "blue collar" jobs and potential displacement of these positions by continued office growth will be addressed in the study. Recommendations for the creation of "Industrial Protection Districts" that could help to mitigate the pressure for conversion of land uses in the South of Market Area were reviewed by the City Planning Commission in January 1982. The recommendations included the possibility of establishing interim controls prohibiting housing or office uses in a South of Market Industrial Conservation District in three areas: 7th, Townsend and Ritch Streets and the Central Skyway; Bryant, Harrison, Eighth and Ninth Streets, and Folsom, Sixth, Eighth Streets and the Central Skyway.

The major employers of craftworkers, operatives and laborers (the general core of blue collar workers) are the manufacturing, transportation, public utilities and construction industries.[2] Some portions of the service industry could also be considered blue collar. All major industries in San Francisco except Transportation experienced growth in the number of wage and salary workers from 1972 to 1980. Table 2 lists only those specific industries that have declined in the number of wage and salary workers from 1972 to 1980. The State Employment Development Department generally categorizes 56 industries in 10 major sectors. The South of Market manufacturing and light industrial users employ a number of blue collar workers (an estimated range of 4,000 to 5,500), an estimated 65% of whom are City residents, who may not be easily absorbed by the office industry in the City.[3]

Table 3 is a list of approved projects and projects under review in the South of Market Area. Four of these projects are known to be warehouse conversions totaling 229,000 square feet.

COMMENTS

David Jones

"One highrise may look good, but the cumulative impacts over the last 15 years show 165,000 new jobs were created. There

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[1]Bob Reeves, Planner IV, Commerce and Industry, telephone conversation 28 December 1981.

[2]State of California, Health and Welfare Agency, Employment Development Department, Employment Data and Research, Coastal Area Labor Market Information Group, Annual Planning Information, San Francisco City and County, 1981-1982, page 31.

[3]Memorandum from Dean Macris, Director of Planning to the City Planning Commission, "South of Market Interim Controls", 26 January 1982.

TABLE 2

ESTIMATED NUMBER OF WAGE AND SALARY WORKERS BY INDUSTRY 1972 AND 1980 WHICH HAVE DECLINED

Industry[1]	Number of Workers 1972	1980	Difference
Food and related	10,700	9,500	-1,200
Canned and preserved fuits and vegetables	2,900	2,800	-100
Beverages	1,200	700	-500
Paper and allied	1,900	1,300	-600
Stone, clay and glass products	500	400	-100
Fabricated metal products	4,900	3,100	-1,800
Machinery, except electrical	1,500	1,100	-400
Motor freight transportation and warehousing	5,400	4,700	-700
Water transportation	9,100	4,100	-5,000
Auto dealers and service stations	4,200	3,600	-600
Federal Government	34,200	30,800	-3,400
TOTAL OF ALL WAGE AND SALARY WORKERS IN SAN FRANCISCO	(455,100)	(551,900)	(+96,800)

Source: State of California, Health and Welfare Agency, Employee Development Department, Annual Planning Information, San Francisco City and County, 1981-1982, pages 85-87.

TABLE 3

PROJECTS APPROVED, UNDER REVIEW BY THE DEPARTMENT OF CITY PLANNING, OR UNDER CONSTRUCTION IN THE SOUTH OF MARKET AREA

Project	Office (gross square feet)	Number of Housing Units
1041 Market	96,500	
90-93 New Montgomery	137,000	
Hunt-Knight Building	333,500	191
71 Stevenson at Ecker	346,000	
562 Mission	540,000	
499 Market	279,200	
Spear/Main Building	301,600	
109/199 Mission	347,000	
135 Main	260,500	
301 Mission at Beale	261,500	50
171 New Montgomery	113,000	
*144 2nd Street at Minna	50,000	
868 Folsom	65,000	
UCB Bank Expansion	61,900	
201 Spear at Howard	255,000	
*625 2nd	168,000	
Marathon, 2nd and Folsom	754,000	
*490 2nd Street at Bryant	40,000	
*480 2nd Street at Stillman	35,000	
Welsh Commons off 4th Street and Bryant	56,000	160
*548 5th	42,000	
650 7th Street near Townsend	127,300	
252 Townsend at Lusk	70,000	
*123 Townsend off 2nd Street	104,200	
195 Berry	113,000	
1155 Market at 8th Street	144,200	
Pacific III Apparel Mart 4th Street and Market	332,400	
101 Mission at Spear	214,000	
315 Howard	389,000	
China Basin Expansion	200,000	
25 Jessie at Ecker	111,000	
5 Fremont Center	743,000	
Federal Reserve Bank	653,000	
150 Spear	330,000	
Pacific Gateway, Mission and Main	548,000	
Yerba Buena Center West	335,000	
Gift Mart	340,000	
*539 Bryant	80,000	

[Note: The above does not include Yerba Buena Center, South Beach Redevelopment area or 1.3 million square foot Bank of America Data Center.]

*Indicates warehouse conversions

Source: Department of City Planning, records, October 1, 1981

are 17,000 less employed San Francisco residents now than there were 15 years ago.

"Somehow every building tries to make it look good. But when you look at the past years' performance it doesn't look very good."

RESPONSE

The 1970 Census counted 318,300 employed San Franciscans with 287,100 working within the City limits.[1] The 1980 estimates indicate that about 335,000 San Franciscans are employed and 295,000 work within the City.[2] The demographics of the City's residents have also changed (e.g. different percentages of different age groups such as the number of residents under 25 years of age has decreased, the number of residents between 25 and 34 years of age has increased) and the total population of the City has declined since the 1950s.[3] No statistics exist indicating job displacement attributable to the creation of new jobs in the City. It is likely that as new jobs are created in San Francisco, the percentage of jobs available to those who currently reside in the City would also increase.[4]

COMMENT

Carl Imparato

"Page v of the Summary, the statement is made that the sponsor seeks a 'reasonable return,' on investment capital. What is a resonable return, we ask. We also would like to know what returns the proposed project and the alternatives would provide.

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[1]U.S. Department of Commerce, Social and Economic Statistics, Administration, The Bureau of the Census, County and City Data Book 1972, page 80.

[2]Association of Bay Area Governments, Projections 79, 1980 and U.S. Census Bureau, Selected Characteristics of Travel to Work in the San Francisco-Oakland SMSA, 1975. Series, No. 88, July 1979, page 23.

[3]State of California, Health and Welfare Agency, Employment Development Department, Employment Data and Research, Annual Planning Information, San Francisco City and County, 1981-1982, page 3.

[4]Department of City Planning, 101 Montgomery EIR, EE 80.26, certified 7 May 1981, pages 289-309.

"These two questions, point out the need for an economic analysis of the project and all the alternatives."

RESPONSE

On page v of the Summary in the DEIR, the objective of the project sponsor is stated as seeking a reasonable return on investment capital. The range and rate of what constitutes a reasonable return is not a fixed amount. The actual profit margins of the project sponsor are proprietary information beyond the scope of the EIR. An EIR is not a market feasibility study and the California Environmental Quality Act does not require such economic information to be included.

COMMENTS

Chairman Rosenblatt

"Page 102, (the) section under employment and housing, talks about using the worst case analysis of 1,200 employees seeking to move to the City. We have never done that before. We have a set of projections at the 40 percent level. That should be used instead.

"The sentence about housing availability is an undocumented generalized statement that I think should be removed or replaced with something that is very specifically documented.

"The words 'housing is becoming more scarce, demand is escalating,' make it documented or take it out."

Calvin Welch

"I would submit that the drafters of this EIR give us the actual or assumed breakout of the work force of this specific building in a table that indicates what their average annual income will be, what percent of the work force will earn 12 to $15,000 a year, etc.

"Only in that way can this Commission rationally assess a rational housing mitigation measure on this project.

"Without that data, the contradictory evidence, the contradictory figures in this EIR are simply useless."

"What is the extrapolation of table 5a to this specific project? Table 5a is meaningless. It is contradicted on page 100, footnote 2."

Commissioner Bierman

"I would reinforce what some of the speakers earlier said about needing an employee table that's more realistic about who will be in the building and what they will be making and what their needs will be."

RESPONSE

Table 5a is discussed on page 184 of this document. Footnote 2 to Table 10 on page 100 of the EIR has been revised as shown on page 56 of this document.

The section 3. Employment and Housing, including the sentence about housing availability becoming more scarce and Table 10a, on pages 102 and 102a is replaced with the following section:

"Forty percent or about 480 of the new office employees generated by the proposed Spear and Main office building would be expected to move to San Francisco. In order to estimate their ability to afford housing in San Francisco, it is assumed that these 480 employees would have the same income distribution as all downtown office workers. Table 10a suggests that under these assumptions about 24% or 115 employees would be deterred from moving to San Francisco because they would be unable to afford the median rent for even a studio apartment.

In reality, the pattern of household movement relating to downtown employment is very complex and would probably not exactly follow the average income distribution as assumed. For example, many jobs on the lower end of the income scale would be held by secondary wage earners within the household and such households would more likely locate for convenience to the chief wage earner's job. This effect would tend to raise the actual income distribution of the project workforce moving to San Francisco. A variety of additional personal considerations would also come into play in the decision whether to move to San Francisco. Moreover, not all lower income employees would be unable to find affordable housing. The median rent statistic implies that 50% of studio apartment are rented below $440 monthly. It is evident, however, that it would be much easier for the higher income employees to make the move."

COMMENTS

John Elberling

"Whether located in the Setting or Impact sections, the amount of 'secondary' permanent employment, and its corresponding estimate of housing demand thereby generated, needs to be identified in the DEIR's of all three projects,

TABLE 10a

Estmated Number of Office Worker Households Able To Afford Various Monthly Housing Costs for the Spear and Main Office Building (Based on 1981 Data)

Housing Type (Rental)	Median Monthly Cost	Number of[1] Spear/Main Employees	% Able to[2] Afford Cost
Studio Apartment	$ 440	360-370	75-77
One Bedroom	500	340-350	70-73
Two Bedroom	560	320-330	66-69
Three or More Bedrooms	590	320-330	66-69
1980 Census Median Rent	310	480	100
(Purchase)			
New Single Family	$1,570	65-75	13-16
Existing Single Family	1,497	75-85	16-18
Condominium	1,140	105-115	22-24
1980 Census Owner-Occupied Dwelling	1,215	95-105	20-22

[1]The numbers of employees presented in the table are based on the assumption that 40% of the project employees would move to San Francisco. Thus, the percentages are applied to a total of 480 employees rather than 1,200. It is further assumed that these 480 employees would have an income distribution similar to all downtown office workers as reported in the 1974 SPUR study (see Table 5a).

[2]The table assumes that all employees are part of households and does not reflect availability of housing, just the affordability. Households are assumed to spend 30% of income on housing.

(Marathon, 101 Montgomery and Washington/Montgomery as well as the proposed project). Moreover, this demand should be given estimated allocations to other Bay Area counties as well as San Francisco; it cannot be assumed that the distribution of such 'secondary' employees' residences will be the same as for the project on-site employees.

"The discussion of housing impacts in the Second and Folsom and Spear and Main DEIR's must be expanded in scope and analysis to one comparable with the discussion contained in the Montgomery-Washington DEIR. All three DEIR's need to include, as noted above, discussion of the impacts of 'secondary' project employment as well on housing demand in all Bay counties.

"All housing impact as noted above, attributable to the project's 'secondary' employment impact, and not the subject of any specific mitigation measures, must necessarily be identified as unavoidable adverse impacts also on a county-by-county basis and in the categories noted above."

Carl Imparato

"Address the housing impacts associated with secondary employment. Those impacts would increase the project's primary impacts by about 35 percent, bringing the total project demand to 350 units.

"Regarding secondary employment impacts throughout the draft EIR, secondary impacts on parking, transit, traffic and housing, they are all missing. There is no discussion of them.

"Other EIRs discuss those impacts. This EIR should as well."

RESPONSE

Employment multipliers have been developed for a number of recent downtown office building EIRs based upon a regional, Bay Area input-output (I-O) model. This model describes the structure of purchase and sales transactions which occur among the various economic sectors on an area-wide level. The model does not describe how transactions occur among sub-areas within the region. Therefore, the employment multipliers based on the regional I-O model do not contain

any information about how the secondary impacts would be distributed among the Bay Area counties. In the absence of this specific information, secondary impacts on overall housing demand, and a jobs/housing imbalance, rental housing, affordability of housing, parking, transit and traffic cannot be addressed on a county-by-county basis.

The following sentences have been added to the first paragraph on page 98 to indicate overall secondary impacts:

> "Secondary employment would be generated through the multiplier effect. Assuming that the new permanent jobs are in the finance, insurance, and real estate (FIRE) sector, about 1,440 additional jobs in other sectors of the Bay Area Economy would result from the growth of FIRE business.[1] About 37%, or 530 of these jobs, would be blue collar jobs. The total number of Bay Area jobs that would be supported by the growth in permanent downtown employment due to the project would be 2,640."

COMMENTS

Carl Imparato

> "What are the impacts of the unmet housing demand in terms of displacement?"

RESPONSE

There are no specific data available on the nature of population turnover in the City due to changes in housing costs. In general, the State Employment Development Department reports that the segment of San Francisco's population under 25 years old has declined, while the number of residents between 25 and 44 years, particularly between 25 and 34 years old,have increased.[2] This suggests that more of San Francisco's population is of working age, that the number of households is rising and that

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"[1]This discussion follows the analysis in the Five Fremont Center Final EIR, EE 80.268, certified 12 March 1981, page 86."

[2]California Employment Development Department, Annual PlanningInformation, San Francisco City and Count 1981-1982, page 3.

household income may be rising. In this situation, residents on fixed incomes and relatively large households could be at an income disadvantage. However, the extent to which this population shift has been augmented by changes in housing prices, and the relation of such effects to office building development cannot be reliably quantified.

The following paragraph will be inserted as paragraph 5 on page 103:

"To the extent that the jobs/housing imbalance tends to pressure housing costs upward, low income persons could be displaced from San Francisco. This effect would be reduced if low income residents obtain jobs in downtown office buildings."

COMMENTS

John Elberling

"The Second and Folsom and Spear and Main DEIR's need to include the information presented in tables C-1 and C-2 of the Montgomery-Washington DEIR, pages 200 and 201, as expanded by item a. above.

"Any unmet housing demand identified in the Impacts section and not specifically mitigated as a requirement of project approval and development (see immediatlely above) must be specifically identified as unavoidable negative impacts on, respectively, overall housing demand and jobs/housing imbalance, rental housing demand/supply imbalance, 'affordable' housing demand/supply imbalance by household income levels, and displacement of existing low/moderate income households. Such unavoidable adverse impacts must be stated not only for San Francisco but all Bay Area counties, separately."

Carl Imparato

"We ask that the Commission press for adequate and complete discussion of housing impacts, a discussion which can answer the questions:

"One, what is the cumulative housing demand associated with all projects in the pipeline?

"Two, if such housing could be built in San Francisco, where could it possibly be located?

"We think the demand is about 25,500 units. Where could you locate 25,500 units in the City?

"Address the regional impacts, for example, new East Bay office workers are expected to constitute 30 percent of the project's occupants. Discuss the development and displacement pressures in the nearby communities, East Bay, Marin, Peninsula."

RESPONSE

Additional data have been added to the EIR (page 103) which indicate that, through 1985 the cumulative housing demand from downtown office development would be under 18,000. There are not data available to accurately estimate the current overall housing demand in San Francisco. Projections suggest that if growth of San Francisco housing development continues at recent rates, the cumulative demand will not be met. It is not possible within the scope of the EIR to assess where new housing might be constructed in San Francisco.

The following will be added to the first paragraph on page 103:

"Table 10b presents major office building construction in San Francisco as of 1 November 1981:"

The following paragraphs will be added to page 103:

"Table 10c indicates the direct housing impacts of the project on the 4 areas within the region, as well as the cumulative impacts of downtown office development. For San Francisco the projected housing demand exceeds projected growth by a factor of nearly 3. The overall jobs/housing imbalance in San Francisco, which is the ratio of the number of jobs to the number of housing units, is estimated to be about 1.65 and ABAG projects an increase to 1.95 by the year 2000.[1]

"If the number of secondary employed workers per household is also assumed to be 1.8, the secondary employment generated by the project would create demand for an additional 659 housing units throughout the Bay Area."

"[1]Association of Bay Area Governments, Population Employment Housing Projection 1948-2000, Projection 79, pages II-7,10."

It is not appropriate in the EIR to identify the housing impacts as unavoidable negative impacts since mitigations have been proposed. The EIR does not, by law, establish conditions of project approval. Conditions are established by the City Planning Commission which is required to make appropriate findings regarding whether impacts would be mitigated if the commission determines that project approval is appropriate.

TABLE 10 b

MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO
as of NOVEMBER 1, 1981 in gross square feet

Year	Ttl.Gross Sq. Ft. Cmpltd.	5-Year Total	5-Year Annual Average	Cumulative Total All Office Blds.	All Downtown Office Buildings
Pre-1960		(Net)(3)	(Net)(3)	28,145,000(1)	24,175,000(2)
1960	1,183,000				
1961	270,000				
1962	---				
1963	---				
1964	1,413,000				
		2,866,000	573,200		
1960-1964		(2,580,000)	(516,000)	30,725,000	26,754,000(3)
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
		8,379,000	1,675,800		
1965-1969		(7,541,000)	(1,508,000)	38,266,000	34,295,000
1970	1,853,000				
1971	---				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
		8,615,000	1,723,000		
1970-1974		(7,753,000)	(1,550,000)	46,019,000	42,048,000
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	---				
1979	2,532,000				
		8,157,000	1,631,400		
1975-1979		(7,341,000)	(1,468,000)	53,360,000	49,389,000
1980	1,284,000				
1981/82	3,138,000			57,340,000	53,369,000
Under Construction 83/84	5,600,000	10,022,000	2,004,000		
1980-1984		(9,020,000)	(1,804,000)	62,380,000	58,409,000
Approved Projects	3,113,000			65,182,000	61,211,000

Source: Department of City Planning records

(1) Source: S.F. Downtown Zoning Study - Working Paper No.1, January 1966, Appendix, Table 1, Part 1. For pre 1965, includes the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes 1/3 of mixed use retail/office. For post 1964, includes the entire city.

(2) Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the 1/66 report. For post 1964, the entire area east of Franklin is included.

(3) Net equals 90% of (gross). Net new space is added at an increase factor of 90%, since is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.

TABLE 10c
PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT
ON REGIONAL HOUSING MARKETS

Housing Market	Residency of San Francisco Office Employees[1]	Housing Units[2] Demanded	Household Cumulative Demand[3] 1979-1985	Net Housing[4] Stock Growth 1980-1985	Project Demand as % of Growth 1980-1985
San Francisco	40%	260	17,200	5000-6500	4.0 to 5.2
North Bay	12%	80	6,200	30,700-37,500	0.2 to 0.3
Penninsula	18%	120	8,800	57,500-70,300	0.2 to 0.2
East Bay	30%	200	16,000	47,000-57,400	0.3 to 0.4
TOTAL	100%	660	48,200	140,200-171,700	0.4 to 0.5

[1]Based on adjusted trip generation data, page 58 of the present study.

[2]Project workforce of 1,200 and a ratio of 1.8 workers per household.

[3]Based on projected San Francisco housing demand created by downtown office development in Sedway/Cooke, Downtown San Francisco Conservation and Planning Program, Phase I, October, 1979 p. 47, 48.

[4]Based on straight-line projections of rates of building permit activity from 1975 to 1979 reflected in ABAG, Housing Activity Report, No. 3, May 1981.

See the Response to the previous set of comments, page 214, regarding the lack of data necessary to properly assess displacement impacts.

John Elberling

> "Using the information provided in the Setting section, the impact of the project's on-site and 'secondary' employment on the housing demand of all Bay Counties needs to be stated by price segments of the housing market, and by type (rental or condo-sale) to the extent possible. E.g., x% can afford housing in range $a-$b; y% in range $c-$d, etc., using accepted U.S. DHUD standards of low/moderate/middle/upper income households to identify at least four such ranges. Those households whose income is insufficient to afford unsubsidized for sale housing should be identified as the percentage of on-site and 'secondary' demand impact on the rental housing markets of the respective counties."

RESPONSE

The suggested methodology for describing regional housing rental and purchase affordability for project employees is inconsistent with the approach undertaken generally in this study for anticipated San Francisco residents. The likely income distribution for the project workforce developed in the draft is a more relevant basis for the analysis than HUD income criteria. The federal criteria are based on SMSA averages for the entire workforce. Thus, they neither reflect the proper spectrum of occupations, nor the fact that the San Francisco office workforce will likely exhibit a special income distribution due to the greater proportion of headquarters operations located in the downtown.

See the Response on page 211, under Employment and Housing Impacts for a discussion of the difficulties in distributing secondary employment impacts within the Bay Area region.

The following paragraph will be inserted at the end of the Employment and Housing section, page 102 in the EIR (see the Response on page 209 for revised version of the first 2 paragraphs of this section):

> "Table 10d indicates what proportion of those project employees who are expected to live outside San Francisco could afford the cost of the average price home in their respective locations. As in the Impacts section of Employment and Housing, the employees in each of the areas are assumed to have the same income distribution as all downtown office workers. The percentage of project employees able to afford average priced housing ranges from a low 14% on the Peninsula to a high of 23% in the East Bay. Rental housing is generally within financial range for employees, at least for smaller units. Three bedroom apartments would be affordable for 53% to 79% of the households.

TABLE 10d

Estimated Number of Office Worker Households Residing Outside San Francisco Able to Afford Average Priced Housing and Rental Units for the Spear and Main Office Building

		Average Housing Price	Monthly[2] Housing Cost	Total Employees	Percent Able to afford[3] Monthly Cost	Number Able to afford Monthly Cost
East Bay		$115,025[1]	$1,160	360	23%	83
Rental:[4]	Studio		--		--	--
	One-bedroom		277		100	360
	2-bedroom		320		100	360
	3-bedroom		417		79	284
North Bay		154,457[1]	1,560	144	16	23
Rental:[5]	Studio		256		100	144
	One-bedroom		386		82	118
	2-bedroom		479		74	84
	3-bedroom		654		62	89
Peninsula		160,103[1]	1,620	216	14	30
Rental:[6]	Studio		350		100	216
	One-bedroom		450		76	164
	2-bedroom		550		69	149
	3-bedroom		750		53	114

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[1] Real Estate Research Council of Northern California. Real Estate Report, April 1981, p. 4

[2] Estimate of purchase cost for homes assumes 20% downpayment with a 30-year mortgage at a fixed interest rate of 15%.

[3] The table assumes that all employees are part of households and does not reflect availability of housing, just the affordability. Households are assumed to spend 30% of income on housing.

[4] Average rental rates in the cities of Hayward and Pittsburg provided by Mark Miller, Rent Review Officer, City of Hayward, Jan. 11, 1982; and Ted Spagopulos, Housing Manager, Pittsburg Housing Authority, Jan. 12, 1982.

[5] Average rental rates of Napa, Marin and Sonoma counties obtained from Joyce Trentoste, Napa Housing Authority, Jan. 6, 1982; Tina Vera, Planner, Sonoma Housing Authority, Jan. 12, 1982; EIP survey of published rental rates in Marin County.

[6] San Mateo County rates provided by Marty Boat, Urban Planning Economist, San Mateo County, Jan. 6, 1982.

COMMENT

David Jones

"I would like this EIR to look at the cumulative impacts on the residential neighborhoods of the construction of highrises downtown without sufficient housing to accommodate the demand and would like them to revise or reevaluate their determination that there is a net benefit to the City.

"I think if you look at this chart here in 1965, downtown paid $27.2 million in taxes, in 1980 it paid $26 million. In 1980 dollars, their actual taxes went down by 63 percent. And I think these highrise EIRs should indicate the tax shift that happended from the downtown to the neighborhoods.

"One of the major things when you look at a building just by itself, you don't look at the cumulative impacts on the neighborhoods, on residential taxpayers, of downtown development.

"And if you will look at the chart which I just passed out, it will show that from 1965 to 1980, the assessed value of the downtown district went up by 100 percent.

"It also shows that the assessed value of San Francisco neighborhoods went up from 150 to 350 percent. That is because there was such a imbalance in the construction of highrise and the creation of the expanded housing compared to how much housing was available, that the assessed value of the houses got bid up dramatically as there was no housing.

"As it turns out, the assessed value of the neighborhood went up a factor of 2 to 3 times faster than the assessed value of downtown.

"So while in 1965 the assessed value of downtown was 23 percent of the City total, in 1980 the assessed value of downtown is only 13 percent of the City total.

"We saw a dramatic tax shift from the downtown to the residential taxpayers in the last 15 years."

RESPONSE

The implication is made that office growth in the City is responsible for the increase in housing cost and limitations in availability. With the increase in the value of residential

units, tax assessment has also increased. Downtown office development, however, is one of a variety of factors which affect the cost and availability of housing in San Francisco. The conditions in the regional housing market also affect prices in the City. San Francisco is one of several areas in the Bay Area region in which housing demand is greater than the supply. ABAG reports that "the core of the region" - San Francisco, North Alameda, Hayward and South Marin - issues permits an average of 50% below the ABAG annual goal for their area."[1] Job growth throughout the region coupled with lagging housing in a broad area, high interest and inflation create added pressures on housing prices in San Francisco. The future availability of housing is not specifically known. One indication of the availability of housing is the vacancy rate, the current vacancy rate for housing in the city has been estimated to between 0.8% to 5.6% (page 76).

The analysis in the above comments of relative growth in assessed values does not adjust for the effect of Proposition 13 on the total amount of property taxes paid by property owners in the downtown, although the different tax rates for 1965 and 1980 are given in the referenced table. Had the same tax rate been applied in 1980 as in 1965, the decline in total taxes paid would have amounted to 23% rather then 63%. Moreover, the downtown area experiencing this decline in property taxes paid is considerably larger than the area in which intensive office building construction has occurred (i.e. the C-3-0 district). Mr. Jones's analysis defines the downtown as the area between Market, Larkin and Sacramento Streets, so that it is not clear that the decline is directly related to the office building development. Lagging growth in property values surroundig the C-3-0 District and demolition of buildings for redevelopment purposes, for example, would tend to understate overall revenue growth in the city. A recent Gruen Gruen + Associates study indicates that new develoment in the C-3-0 District increases assessed values by about 140%.[2]

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[1] ABAG, San Francisco Bay Area Housing Activity Report, No. 3, May 1981, page 49. The housing goals have not yet been finalized, however. The ABAG executive board is scheduled to approve the goals by May 30, 1982, which will supercede those which are discussed in the ABAG report. Dan Lopez, Chief of Housing Program, ABAG, telephone conversation, February 2, 1982.

[2] Gruen Gruen + Associates. Fiscal Imapcts of New Downtown Office Development on the City and County of San Francisco, March 1981, page 107.

COMMENTS

Commissioner Bierman

"This is just a question for somebody to answer in the comments: Page 102 and 102 A, there is a phrase -- I don't understand the note at the bottom of page 102 A and it is probably a limitation on my own part, but, 'the above table assumes that all employees are part of households and does not reflect availability of housing just, the affordability.' I need help on understanding that."

RESPONSE

The referenced statement is intended to indicate that the analysis assumes that sufficient housing units exist to accommodate the anticipated demand from new project employees. Table 10A, page 102, does not reflect availability of housing just affordability. A discussion of the vacancy rate is given in response under Employment and Housing Setting, page 175.

C. Employment and Housing Mitigation

COMMENTS

Carl Imparato

"Regarding housing mitigation measures, page 113, we are happy to see a recognition that the developer recognizes at least the housing impacts of the project not only on San Francisco but regionally. But the proposed mitigation is insufficient in that a firm, legally binding commitment, not just good faith, a firm commitment must be obtained prior to consideration of project approval. We would like to see that sort of mitigation measure put in the final EIRs and see what the developer says about that."

John Elberling

"a. Mitigation equivalent to item No. 10, page 114, included in the Montgomery-Washington DEIR needs to be simply and clearly stated in the Second and Folsom and Spear and Main DEIR's.

"b. Comparable mitigations for housing impacts, on the same basis of computation as said No. 10, need to be stated for that portion of housing demand generated by on-site employees in other Bay Area counties besides San Francisco.

"c. Specific additional mitigation for that segment of the housing demand generated by on-site employees for rental housing, as identified in the Impacts section as per above, needs to be stated, as well as specific mitigation (with partial overlap) for that portion of such demand in the low/moderate/middle-income household affordable segments of the housing market which cannot be acccommodated by unsubsidized housing production.

"d. Proposals for 'studies' and 'best efforts' and any similar non-binding mitigation measures are not valid mitigations of any sort. The studies are complete (cf: Citizens Housing Task Force reports), and an unsecured promise has no legal substance (see CEQA 15032.5)."

Carl Imparato

"Mitigation for the project's 350 units San Francisco housing demand must be undertaken in San Francisco, not in the Bay Area.

"Mitigation of the other regional components of housing demand possibly should be undertaken in the appropriate effective communities."

Chairman Rosenblatt

"Somewhere I think it would be useful to have a discussion of mitigation measures that we have used in other recent approvals for housing and some discussion as to whether this developer finds that an acceptable mitigation measure or not, and rationale for that decision.

"The last paragraph on page 114, which talks about a panel of people involved in the housing industry, I think that is probably irrelevant at this point, because there is such a problem existing that was funded by an anonymous grant through the San Francisco Foundation with a very strong group of people. In terms of their expertise to duplicate that kind of an effort as a mitigation measure, doesn't seem to have any incremental value."

Commissioner Bierman

"I was troubled by the 'cause to be built,' not 'good faith efforts.'" (Page 113 of the DEIR).

RESPONSE

The project would generate a demand for 259 dwelling units, as noted on page 103 of the EIR. The difficulty of accurately assessing project housing impacts in specific communities and the inability of the City of San Francisco to enforce measures outside the City make it inappropriate to impose mitigation measures for very specific localities in the Bay Area.

Legally binding commitments need not be made in the text of the EIR. The Planning Commission resolution of approval on the project would be the appropriate document in which to stipulate legally binding commitments, should the Commission decide to approve the project.

The last paragraph on page 113 of the DEIR and both paragraphs on page 114 have been deleted. The following text is added to the EIR:

> "According to the formula contained in the Memorandum, 'Housing Requirement for Office Development in San Francisco' (Dean Macris, Director, Department of City Planning, July 1, 1981), the project would generate a demand for about 259 housing units in San Francisco. The Planning Commission could require the project sponsor to satisfy the housing demand by development of on- or off-site housing, or by other means such as contributions to a non-profit housing development corporation.
>
> "Measures Accepted by the Project Sponsor
>
> "The project sponsor would cause to provide 259 housing units in San Francisco off the project site.
>
> "Measures Rejected by the Project Sponsor
>
> "The project sponsor would not provide housing on the project site."

COMMENTS

Commissioner Nakashima

> "Under housing mitigation, one of the things I think we need to start looking at more closely is that it's not good enough any more to say they have to build housing.

"They need to build housing that matches the profile of the employee who is going to be using the building and what they can afford. The housing should mitigate the impact of the profile of the employees in the proposed project and not just build housing which is almost always market rate and a lot of these people can't afford it."

Chairman Rosenblatt

"The housing section appears to me to have been written quite a bit earlier than where we are relative to other projects.

"It talks about a good faith effort to build housing in the Bay Area and if it is the intent to do it in the Bay Area, that does broaden the question of whether you are dealing only with 40% of the employees or 100% of the employees and where the housing is to be built.

"If they wish to deal with the whole area in creating housing, it's then necessary I think to consider the question of mitigating with respect to 100 percent of the employees.

"It may require the kind of broad regional analysis of housing availability that was discussed before."

RESPONSE

See Section IV.1.B, Impacts page 51 regarding additional analysis of regional housing impacts and affordability. The type and cost of housing provided by the project sponsor in San Francisco have not been determined.

The mitigation measure regarding regional housing on page 114 of the DEIR has been deleted.

2. Transit

A. Impacts

COMMENTS

Carl Imparato

"What would happen to the Muni's average speed, currently 9 miles an hour? If the Muni's average speed dropped one mile an hour, cost during the p.m. peak hour would have to go up 10 percent, run 10 percent more buses to get the same amount of service. The 315 Howard Environmental Impact Report said on page 79 that as a result of new

development, operating speeds and operating efficiency would decrease as a result of the overloading conditions on Muni.

"Now, what would be the cost impacts of the congestion? Who is supposed to pay for those costs? Who is supposed to pay for the increase in the costs for existing service due to new congestion?

"Costs to all transit systems should be estimated. For example 315 Howard, estimates impacts of cumulative growth on AC Transit, Golden Gate Transit and BART. Why can't this EIR do that?

"The 5 Fremont EIR estimated that that project alone might increase the BART deficit by $577,000. BART is directly subsidized by City residents through sales and property taxes. Thus, increased BART deficits must be viewed as a direct cost of downtown growth and this aspect of the drain on City taxpayers should be looked at in the final EIR, but that's not in there.

"Regarding the Muni costs of the project, $81,000 annually according to page 101, that's ludicrous. The approach that's used to calculate this figure, which is just to take the number of new riders by day and multiply by the average general fund subsidy, is an absurd way to approach the problem, particularly if you look at the project being one in a string of 26 million square feet of office projects development, because that's going to require 46% increase in downtown peak hour capacity for Muni.

"The approach used in the draft EIR assumes that if the number of passengers on Muni doubled, Federal and State subsidies to Muni would double as well. That's certainly not true. The approach assumes continued Federal subsidies for new buses, for new Muni Metros, for electrification, for growth, when in fact, Federal subsidies can barely provide Muni with equipment to replace existing aging capacity. The Muni's embedded costs are much, much lower than current expansion costs.

"It ignores all of the impacts of future congestions on Muni's operations, despite clear statements in other EIRs that increasing downtown congestion will increase Muni deficiencies.

"Let's go back to the 456 Montgomery EIR, November 1979, the cost of providing an additional peak hour run was $53,000 a year two years ago. We will ignore inflation for now. This proposed project would generate 288 more peak hour passengers. As a part of cumulative growth,

that would mean 3.84 more bus runs during the peak hour, that would be a cost 3.84 times $53,000 per run, a cost of $210,000 a year, which is far beyond the $81,000 that's estimated in the draft EIR.

"$210,000 is very conservative (and) only looks at operating costs, not the cost for new capital and equipment, and doesn't look at the cost of the congestion.

"As to the methodology used in this EIR to estimate Muni costs, it really should be changed to one that reflects the true cost of downtown growth."

Chairman Rosenblatt

"On page 101, there is the discussion of Muni's costs. I think we should attempt to look at that now in the context of the data that has been now presented by the Public Utilities Commission this week, earlier this week, with respect to the proposed Transit Assessment District.

"If I understand what is done here in the analysis, the deficit per ride assumes equal service throughout the City and equal cost for various sections of the City and that is, if that's true, that's in contradiction to the data now being generated by the Public Utilities Commission, where some very specific higher costs are related to the downtown area.

"You should use the new methodology relative to that and make changes as to what these figures are, if that's appropriate."

John Elberling

"5) Page 101: Muni costs should be calculated using the full cost of service, and not just the local share. This will give a more accurate reflection of the true costs of providing Muni service for the employees and users of this proposed development. The local share changes each year, dependent upon many factors, and thus can be very misleading.

"6) Page 101: This DEIR uses a figure of 28% of daily trips made by Muni. However, this number is based on past surveys. If no new parking is added, and there is an increase in the number of downtown employees, then a higher percentage would have to use public transit. This 28% figure should be raised to reflect this increased percentage of employees who would have to use transit. This would greatly increase the estimated impact this proposed development would have on Muni."

David Jones

"The cost of downtown development on new municipalities, I think this section is incomplete and should be revised. And I would like to just make one example, which is the Muni costs.

"Every EIR, the last 4 or 5, everybody has widely differing viewpoints of how much the cost is to San Francisco residents because of Muni.

"So what I've done I took the value that was in the past ordinance for the one time fee, which comes out to 23 cents a square foot per year. The thing that was in the paper today, which shows how much operation and maintenance expenses would be in an annual fee, which is 29 cents per square foot per year you come up with Muni costs alone of 50 cents per square foot a year, or $145,000, which is much more than was indicated in the EIR."

RESPONSE

If Muni's average speed dropped from 9 miles an hour to 1 mile per hour, costs during the p.m. peak hour would probably increase 10 percent. The increased costs would have to come from a variety of sources none of which are addressed in the EIR. No assumption is made regarding the sources of funds for the Muni budget. Federal funds are continually decreasing and additional sources must be sought by the Muni which could include an increase in General Fund allocations, an increase in fares, the Transit Impact Fee, bonding programs, the creation of an assessment district, etc.

Costs for BART and Muni are calculated in the revised analysis given in the response to comments about fiscal impacts (pages 180 and 179). Costs for AC Transit, SP, SamTrans, and Golden Gate Transit were not calculated as these transit systems would be able to accommodate project generated riders with the existing capacity. In addition, marginal cost methodology has not been developed for these systems.

The methodology developed for the analysis of the proposed Transportation Assessment District is intended to establish the extent to which a "special" level of Muni service (or "benefit") is provided to the downtown over and above the level of service provided to the balance of the City.[1] The concern of the Public Utilities Commission in generating the new data is to estimate the average cost of Muni service currently provided in the downtown district. The methodology is not intended to calculate the marginal cost that new

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[1]Bruce Bernhard, Manager, Analysis Unit, PUC telephone conversation, 20 January 1982.

development would impose on Muni services. For this purpose, the methodology employed in the EIR represents the most current approach in estimating marginal costs.

The reason for concentrating on average costs in relation to the proposed Assessment District is that the establishment or expansion of the District can only occur in areas where a special level of service is already provided. A District cannot be established in areas where higher level of services are anticipated as a result of proposed development. Certain other legal restrictions in the cost assessments emphasize this distinction. For example, only the cost of replacing worn-out capital can be assessed to the District. New buses or other capital intended to serve new developments cannot be purchased from Assessment District revenues. Estimates of costs appropriate to the proposed Assessment District are in any case presently incomplete due to the data limitations related to capital and feeder-line costs.

A revised analysis of transit costs has been given in the response to comments about fiscal impacts. This revision addresses the comments expressed here under Transit Impacts (page 179).

B. Mitigation

COMMENTS

John Elberling

> "7) Page 106: Mitigation measure #2 encourages increased transit use. This suggestion is fine, but how will the needed increase in Muni service to handle this greater ridership be provided and financed? This is what the mitigation measure really needs to address."

RESPONSE

At present it is not known how the needed increase in Muni service would be provided and financed. Muni is currently reviewing such options as the increase in transit fares, a Transit Impact Fee, the establishment of a downtown assessment district, increase in General Fund allocation and other sources of potential revenues.

V. LAND USE

COMMENTS

Carl Imparato

"On page 53, there is a statement that says the project would contribute on an incremental but cumulative basis to economic, fiscal, transportation and visual impacts. We think that that statement should also include housing and air quality impacts because the impacts are there and previous EIRs do make that statement.

"On page 18 the statement is made that downtown San Francisco has approximately 43 million square feet of office space. SPUR claimed in 1974 that there were 50 million square feet of office space downtown, and adding growth since 1974 would bring the total to over 60 million square feet. The 5 Fremont EIR earlier this year claimed that there were 59 million square feet of office space at the time. This seems to be really inconsistent and it is kind of a shock to learn that the City is losing office space, when in fact you have been approving projects at a rate of 3 1/2 million square feet a year."

RESPONSE

The first sentence in paragraph 3 on page 53 of the EIR is amended to read:

"The project would also contribute on an incremental, but cumulative, basis to economic, fiscal, air quality, housing demand . ."

It is true that different documents contain different statistics for the amount of office space contained in downtown San Francisco. This is because the statistical data used as source information vary from survey to survey. An updated calculation of the amount of office space in downtown San Francisco, as provided by the Department of City Planning is in Table 10B, page 215 of this document, Major Office Building Construction in San Francisco as of November 1, 1981 in Gross

Square Feet. Excluding approved projects and buildings under construction, Table 10b shows downtown San Francisco contains 53,369,000 gross square feet of office space. Adding projects under construction or approved brings the total up to 61,211,000 gross square feet of office space.

COMMENTS

Carl Imparato

"The draft EIR points out that on the block of the proposed project, there are two existing office buildings, there are two more buildings under construction, and there are three more buildings proposed, including this one. We ask what sort of overall plan and guidelines the City has for developing this block as a whole, rather than on a piecemeal basis.

"I remember that at the hearings for the 1155 Market Street office building, Zane Gresham argued and the Commission agreed at the time, that the creation of a plan for cumulative development on that block was appropriate. We assume that the same holds for this block, but nothing is said about that in the draft EIR. We request a discussion of the City's overall plan for the block."

RESPONSE

A diagram of the project block pedestrian system as envisioned by the Department of City Planning is shown on page 68 of the EIR. In a recent memorandum which accompanied the diagram from the Department of City Planning[1] to the various architectural firms designing structures for the block it was noted:

"In the projects listed above we have the unusual circumstance of 4 adjacent projects on the drawing board at the same time. Not only will the 4 projects be viewed as a group, they will also be linked by an interior pedestrian system intended to provide convenient access to the Transbay Bus Terminal and recreational opportunities.

"The Department of City Planning is concerned that the buildings work together in a positive manner to create a strong and pleasing streetscape; contribute to the

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[1]Memorandum to: Skidmore, Owings and Merrill re: Mission and Main Project; Jorge de Quesada re: Spear and Main Project and 101 Mission Project; Robinson Mills and Williams re: 135 Main Project from: Richard Hedman, Principal Planner for Urban Design, San Francisco Department of City Planning, 19 June 1981.

formation of a graceful skyline, and result in an interesting and vital walkway in the center of the block . . . . The ultimate objective is a complex wherein the whole is greater than the sum of the parts. Achieving a harmonious diversity is an important key to a successful solution. This requires the presence of certain unifying factors underlying the various design approaches."

COMMENTS

Carl Imparato

"Page 54, City Development Policies, Policy One states, 'Encourage continued growth of prime downtown office activities, so long as the undesirable consequences of such growth can be avoided.' Then the text says that the proposed project will be consistent with this policy. That really assumes that the project's undesirable consequences can be avoided and we don't think that assumption is warranted, because we have to look at this commission to make that finding. We ask that this presuming of consistency be removed, since it is an inappropriate judgment on the part of the authors."

Sue Hestor

"On page 21, that map is a very cute map of all the projects in the area, but I think it is intentionally misleading. It does not include the Second and Folsom project and I can tell you where Second and Folsom is on that block. That is a big project.

"It does not include the slew of conversions and other projects that are occurring on Second Street and your staff has records of at least six projects on Second Street. It also doesn't include other conversions that are occurring in that area.

"By using Market Street as the boundary, you nicely omitted having Mr. Hines' building on there.

"I think a corrected Figure No. 12 that more accurately puts that project into context of an explosion South of Market in particular around Second Street, which seems to be a new frontier, is warranted.

"On page 22, I think you should note on that map that 101 Mission has been approved by the commission. It deserves a different kind of a shade."

The fourth paragraph on page 54 of the EIR is changed to read: "As noted in the Element," . . . assuming that (environmental and aesthetic) costs are controlled within publicly acceptable limits, the City should encourage continued office growth.[1] Accordingly, the proposed project should be measured against any adverse impacts it would cause in determining what would be "publicly acceptable" (see Chapter V, Unavoidable Adverse Impacts, page 115).

Figure 12, Land Use Map, on page 21 of the EIR does not include Second Street, or the 2nd and Folsom project site, which is 5 blocks from the project site. The purpose of Figure 12 and its companion drawing, Figure 13 on page 22 is to show land uses recently constructed and proposed buildings in the immediate project area.

Proposed and existing buildings to remain on the project block are shown on Figure 13, page 22 of the EIR. Figure 13 is amended to show the 101 Mission project has been approved for construction by the Planning Commission.

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[1] Department of City Planning, Commerce and Industry Element, Polices and Objectives, 1978, page 25.

VI. VISUAL QUALITY AND SHADOWS

COMMENTS

John Elberling

"Taking a few questions from the EIR and EIR Figure 7 on page 10 is useful. We need an isometric depiction -- we asked for that before on 101 Mission -- which shows several projects built or proposed for the entire block.

"We never have got a drawing that shows the massing of all the four new projects and three existing.

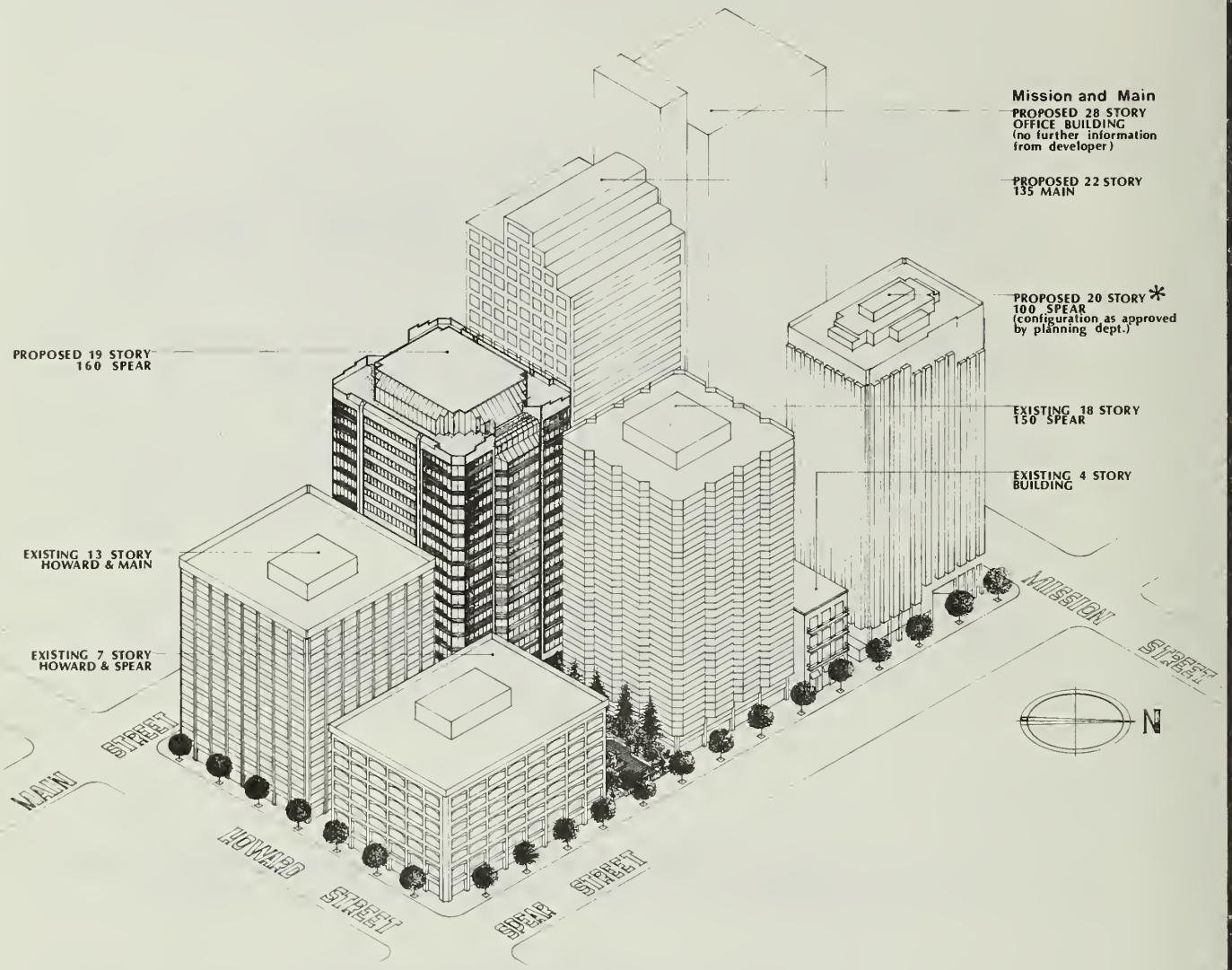
"Page 82, Figure 22, is a very useful figure. It's hard to make out. We need it drawn in a way where one can really understand which building is in front of which, where they are located, one or the other. That's just an artistic question.

"Projects at 388 Market, 562 Mission, which have been proposed are in the initial study stage and should be added to the drawing. Federal Reserve Bank is missing; the Pacific Gateway Tower is out of scale."

RESPONSE

An isometric drawing showing existing and proposed buildings for the project block has been prepared and is included herein as Figure R-1.

Figure 22 is difficult to read because too much ink was used in the press run which reproduced the figure. The scale of the Pacific Gateway building has been revised on Figure 22 and that portion of the Federal Reserve Bank which would show in the photo has been added. The projects at 388 Market Street and 562 Mission Street have not been added because the Initial Studies for the projects do not contain descriptions suitable for graphic portrayal. Designs for the 562 Mission Street project are being revised. The revised Figure 22 is shown on page 235 of this document, Comments and Responses.


Mission and Main
PROPOSED 28 STORY OFFICE BUILDING (no further information from developer)
PROPOSED 22 STORY 135 MAIN
PROPOSED 20 STORY * 100 SPEAR (configuration as approved by planning dept.)
EXISTING 18 STORY 150 SPEAR
EXISTING 4 STORY BUILDING
PROPOSED 19 STORY 160 SPEAR
EXISTING 13 STORY HOWARD & MAIN
EXISTING 7 STORY HOWARD & SPEAR
MAIN STREET
HOWARD STREET
SPEAR STREET
MISSION STREET
N

* Formerly Known as 101 Mission

Isometric Drawing of Project Block (160 Spear Building Shown as Proposed)

Source: Jorge De Quesada, Architects

Figure No. R-1

View toward Project Site from West End of Bay Bridge Span

Figure No. 22

COMMENTS

John Elberling

"Page 109, which is the mitigation section, they admit in the report their courtyard entrance will be shadowed all during the year and all the time, except in the summer.

"The design of the courtyard in that kind of shadow condition is probably not adequate as it stands. We do have shadow plazas in San Francisco which no one uses.

"I think the developer has to propose something -- I mean I like fountains, but has to propose something that is going to work in a shadow environment as a useful and alive and interurban public open space."

Commissioner Bierman

"Are there any other plazas? I couldn't tell from the shadow patterns whether there are any other plazas, besides this particular project's plaza, that are in the shadow or spaces that have been created for people to use."

RESPONSE

The courtyard referred to in the comment is the 18-foot wide paved pedestrian walkway within a 46 foot wide planted open area extending from the east building face to Spear Street (Figure 8, page 11). The paved walkway would be bordered with decorative plant materials and a fountain would be located adjacent the southwest corner of the 150 Spear Street office building. The walkway, plantings and fountain would be viewed from the upper floors of office buildings that would surround the walkway. As a walkway, the pedestrian area is not envisioned by the project architects to function as a public open space for extended periods of sitting or congregating, and would be the only project pedestrian area that would be shadowed by the proposed building. Other proposed pedestrian areas on the block's interior (see Figure 21, page 68), would be shaded by other proposed buildings when they would be constructed as shown in Appendix B, Microclimate Impact Study, Figures 5-7, pages A-16 through A-18.

COMMENTS

Carl Imparato

"On page 10 of the summary, the statement is made that the sponsor would not build a shorter building, in order to 'optimize financial return on the project.' We ask what the word 'optimize' means. In order to really use that word, you have to define the criteria that you are trying to optimize. So either one of those criteria, or else maybe the phrase 'optimize financial return' is inappropriate and should be changed to maximize financial return.

RESPONSE

Page X, paragraph 3, second sentence has been deleted. The new sentence will read:

"To maximize a financial return on rentable space, the project sponsor is not proposing to construct a structure of lower height containing fewer gross square feet."

VII. PUBLIC SERVICES

1. Child Care

COMMENTS

Kay Patchner

"This draft EIR has left out impacts on children. On page 52 . . . the report does discuss the fact that some revenue that's going to be accrued from this project is going to go to the Unified School District.

"I believe that leaves us an opening to then ask that the staff of the Planning Department begin measuring the impact in San Francisco on the children of San Francisco and on the parents of those children.

"When the employees are measured and we are given figures of $18,000 or less as the average income, it is very apparent once again that ... if there is a partnership section, both members of the family are working parents and have to provide for child care.

"The setting on child care now ... is that it is woefully inadequate for the parents in San Francisco right now.

"I would like to see the Planning Commission ask the Department staff to get together with the Mayor's Office of Child Care to get the specific shortfall figures. They have been updated within the last month by the Mayor's staff as well as child care switchboard people.

"I have in my possession and will also provide you with copies by January 4th, the September 1981 negative declaration coming from the City of Santa Monica, where there was a 9,000 square foot project called Colorado Place Limited, where the project was given a negative declaration and the reason it was granted a neg dec was the project developer agreed to (a) 2,000 square foot child care facility within the project area.

"The Mayor's Office on Child Care has a subcommittee on employer-supported child care, where a variety of different kind of provisions can be made from the developer to the parents and to the employees, ranging all the way from the developer paying for slots and facilities that exist, paying for new site acquisition of new facilities, building facilities on site, giving employees benefits for child care."

Sue Hestor

"I am sure your staff will say it is not something they have to deal with. I will tell you why you have to deal with it.

"I used to work at the school district. The school district provides child care; that is part of its budget.

"You are saying in your EIRs that the only impact on the school system that you have to look at is whether, if there are 18 kids going to be generated by the project, whether there are 18 class spaces.

"You have the obligation to ask the school district: What is the child care demand that will be generated by that project and will the school district's child care program be able to meet it?

"And in the alternative, if the school district's child care program, which is paid for by our property taxes as well as by the parents, cannot meet those costs, how will it be mitigated?

"This is an honest to God legitimate environmental mitigation, because you got schools ... and so I would be very unhappy if the response came back that childcare is beyond the scope of an EIR."

Commissioner Bierman

"I would agree with Kay Patchner that it's time for us to start looking at the child care issue.

"Years ago U.C. Med Center had to start looking at that as part of a community effort. The way to get good things started sometimes that help people is to start talking about them as an effect in a document and then you begin to see whether it is needed or not."

"I just personally have had experience the past couple of weeks with a daughter and grandchildren, who have a hard time in the morning getting -- if somebody has to take the car to work and then you are there with children and child care is one place and your work is another place, it's a real problem and I think Kay Patchner did a good job of showing how it could be handled in the EIR and should be."

RESPONSE

A need for more licensed child care facilities exists in San Francisco. It is estimated that there are in San Francisco 17,500 children under the age of 5, and 18,000 children between the ages of 5 and 9 who need day care and after-school supervision. There is, however, a total of only 12,000 spaces in licensed child care facilities.[1] This includes the facilities administered and funded by the state but part of the San Francisco Unified School District. Enrollment at these 37 school district childcare sites is about 3,400. This subsidized child care is limited to San Francisco residents falling below 84% of the state median income. Parents must be employed, attending school or medically/physically disabled. It is not known the extent to which the proposed project would contribute to the demand for increased childcare facilities. Cumulative office growth could affect the need for more day care and after-school services.

Advocates of increased child care facilities would prefer to have major tenants and office building developers provide on-site child care facilities, sites for new centers, and/or benefits to those working parents who must provide outside supervision for their children.[1]

2. Police

COMMENTS

Carl Imparato

"We never see any talk about traffic cops in these EIRs. Police services never need any more policemen. They talk about crimes but never about traffic policemen.

"I see them out there downtown and would like to see what the impacts of the mess of traffic congestion would be on police services.

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[1]Lucille Abrahamson, Director, Mayor's Office on Child Care, telephone conversation, 28 December 1981.

"Regarding community services, page 89 discusses police services. There is no impact.

"But earlier EIRs used to claim there was an impact. The 595 Market Environmental Impact Report back in 1975, that EIR found that additional demand for police services for that building would cost the City about $77,000 annually. I don't know where the number came from, but $77,000 annually back in '75 and nothing today.

"Something seems to be inconsistent and really ought to be rectified."

"Regarding cumulative growth, 100,000 more office workers, 25,000 more automobiles, traffic congestion everywhere, and they say all we required in way of increased police services is possibly a foot patrol.

"Why is there no discussion of the traffic impacts on the need for more traffic cops downtown?

"Won't there be more accidents?

"We feel it is appropriate to request an analysis of the project's incremental contributions to cumulative community service impacts. That's not done in this EIR."

"What about the number of traffic cops that are going to be needed to manage this mess (of traffic) with cumulative development?"

RESPONSE

The 595 Market Street EIR indicates that this project would cause increased demands for police protection (0.7 police officer) costing the City $77,000 per year.[1] The method by which this cost figure was derived is not stipulated in the EIR.

Cost for police services was not given in the Spear and Main Office Building EIR because the Police Department has no current cost figures. One approach, however, to estimate cost and revenue effects of new development in San Francisco has been examined in a recent study (March 1981) by Gruen Gruen & Associates titled Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco. Police costs in this study were drawn from an Arthur Anderson & Company study prepared for the San Francisco Chamber of Commerce. This study counted only revenues generated within the C-3-0 District and costs of providing services to the C-3-0 District. From the data compiled from city records and through conversations with city

[1] City and County of San Francisco, Final EIR, 595 Market Street, EE74.322, 1975, pages 48 and 69.

officials, Arthur Anderson & Company estimated that the C-3-0 District was responsible for 3.7% of the total service cost in 1978-79.[1]

Based on this figure, Gruen and Gruen determined that the cost of police services in the C-3-0 District is $98,330 per million square feet of building space. Thus, the cost of providing protection and service to the proposed project would be approximately $30,000 per year.

According to the Gruen and Gruen report, patrol units respond to approximately 173 calls per million square feet of building space and investigations account for 18 calls per million square feet of building space in the C-3-0 District.[2]

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[1]Studies done by Arther Anderson & Company (Downtown Highrise District Cost Revenue Study, November 1980) commissioned by the San Francisco Chamber of Commerce and by David Jones (Downtown Highrise District Cost Revenue Study, February 1981) prepared for San Francisans for Reasonable Growth examine the fiscal impact of the existing downtown. The three other studies address the question of what the fiscal impact of new development would be (Gruen Gruen + Associates study cited on page 105; Sedway/Cooke et al., "Fiscal Concern" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, October 1979; and Recht Hausrath & Associates, "Fiscal Considerations," Appendix C, 101 Montgomery Street FEIR). Of these three only the Gruen Gruen & Associates study developed estimates of the additional service costs associated with new development. See 101 Montgomery FEIR (E80.26) pages 191-196 for a summary comparison of these five fiscal studies.

[2]Computer print-outs of Police Department records were obtained from the Police Department of calls to specific addresses for a sample of 10 old and 5 new buildings in the C-3-0 district. These print-outs were used to find out (1) the average number of calls to buildings in that area and (2) whether the service demand, as indicated by the number of calls required, differed between old and new buildings. The print-outs indicated that newer buildings demanded more patrols calls and more investigative calls per million square feet of building space.

To estimate the additional number of calls demanded by building space, the amount of new space that would have to be built to produce a net increase of one million square feet was calculated. This procedure accounted for older buildings that are demolished when newer buildings are constructed. It was estimated that 180,000 square feet of old buildings is demolished for every 1,000,000 square feet of new space; thus 1,180,000 additional square feet of building space.

The number of calls required per 1,180,000 square feet of new space and the number of calls required per 180,000 square feet of old space was then calculated. The resulting estimates were 173 calls per million square feet of new space for patrol services and 18 calls per million square feet for investigation services.

Based on these figures, the proposed project could generate 53 calls for patrol services and 5 requests for investigation services. Patrols currently handle about 7 million square feet or 1,200 calls per year. To maintain current levels of service, an additional unit could be added when 50% of the average workload, or 600 calls, is generated. The report also indicates that 14% of a traffic division officer's time is required to serve the C-3-0 District and estimates that an additional traffic officer would be required with each addition of 20 million square feet in the C-3-0 District in order to maintain current standards of service.[1]

3. Solid Waste

Sue Hestor

"With regard to garbage on page 91, I find the staff continuing to consult Sunset Scavenger and Golden Gate Scavenger on saying how much capacity they have and no problem.

"This commission also hears the trash burner, the Board of Supervisors hears the trash burner, and to say there is not a solid waste problem in the City is sticking one's head in the sand or perhaps in the refuse pile.

"I think a real explanation of the pressures on the City, because we are using our land fill and how much more garbage is coming in because of cumulative impacts of those buildings, needs to be addressed because you are going to have to mitigate it.

"You are making a decision that the people of Brisbane have to live with the trash burner bit by bit by bit and I want you to be honest and say it in the EIR.

"Then you'll have the responsibility of going and listening to the people of Brisbane and going to the Board of Supervisors which is throwing up their hands in horror on the trash burner."

RESPONSE

Solid waste generated in office buildings is primarily paper At least 50 tons of "grey," or waste paper is recycled daily from the Financial District by Independent Paper Stock Company, an affiliate of Golden Gate Disposal Company. Office waste

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[1]Gruen, Gruen & Associates, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco. March 1981, pp. 32-50.

is sorted, and that paper which is recyclable is boxed and sold to paper companies. The remaining trash is hauled to the Tunnel Avenue transfer station.[1] In addition, approximately 20 local paper recyclers contract to office buildings to buy used high-grade printing and writing paper and computer cards and print-outs. White bond paper usually sells for about $90-$100 per ton and computer cards sell for as much as $220 per ton.[2]

Because waste paper generated in office buildings is recycled, this land use does not adversely impact disposal facilities.

The Mountain View landfill site has a capacity of less than 3 years, pending approval, San Francisco's solid waste would then go to dumping sites in Vacaville and/or Altamont. This time frame takes into account the cumulative downtown development in San Francisco.[3]

The City realizes that measures to mitigate the impacts generated by San Francisco's solid waste must be undertaken. In November 1981, an experimental program began in a portion of the Sunset District to test the feasibility of residential recycling. In addition, the City has received 2 grants from the State Solid Waste Management Board for 1-year pilot residential recycling programs, which are due to begin in spring 1982. The effectiveness of the above mentioned pilot programs will determine if more programs are feasible elsewhere in San Francisco.[4]

As stated in the comment, the City and Brisbane are currently considering a proposal first submitted by Golden Gate Disposal and Sunset Scavenger in 1974. This proposal involves construction of a waste energy plant at the Tunnel Avenue Transfer station. Here, 500,000 to 600,000 tons of non-combustible materials would be mechanically removed from the refuse and remaining materials would be burned. Steam generated from burning garbage would be converted to electricity. The City has asked the disposal

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[1]Fiore Garbarino, Office Manager, Golden Gate Disposal Company, telephone conversation, 23 November 1981.

[2]State Solid Waste Management Board, pamphlets regarding recycling.

[3]Fiore Garbarino, 3 November 1981.

[4]David Cohen, Special Projects, Chief Administrator's Office, City of San Francisco, telephone conversation, 10 November 1981.

vendors to apply for air permits. A revised environmental impact report is expected to be completed by April 1982. If the EIR is certified and the air permits have been approved, the residents of Brisbane will be able to vote for or against the construction and operation of the plant in the November 1982 election.[1]

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[1]David Gavrich, Special Projects, Chief Adminstrator's Office, City of San Francisco, telephone conversation, 28 December 1981.

VIII. AIR QUALITY

COMMENT

Carl Imparato

"Page 72, there is no indication of what the cumulative emissions increases are. There is a statement that's made that there will be no measurable changes due to the project.

"Now, that's why you have a cumulative impact analysis, to see whether the project as part of a group of other projects does have an incremental impact. But the question whether cumulative growth has a measurable impact isn't even asked in the EIR.

"In terms of air quality, it should be noted as in the earlier EIRs, that the project will contribute to cumulative emissions, which would impede the attainment of air quality standards."

RESPONSE

Regional emissions increases due to cumulative growth in the downtown would be 2.3 tons/day for hydrocarbons and 3.0 tons/day for nitrogen oxides in 1983, based on approved projects as of October 1981. This would represent about a 0.4% increase in regional emissions of ozone precursors (hydrocarbons and oxides of nitrogen). This is a major increase from a regional air quality planning standpoint, but would not be expected to have a measurable impact on downwind ozone levels because these emissions are dispersed over a larger area.

The following text is added to the bottom page of page 72.

"However, the increase in regional emissions due to this project and cumulative growth in San Francisco would delay the attainment of the ozone standard in the Bay Area by an unknown amount."

COMMENT

Carl Imparato

"What would be the levels without the so-called cumulative growth?

"What would be the levels associated with all proposed office growth?"

"What are cumulative vehicle miles traveled? The table on page 71 gives us no idea what the cumulative air quality impacts are.

RESPONSE

The cumulative daily VMT based on approved projects as of October 1981 would be 1.4 million. Table 8, page 71, shows predicted carbon monoxide levels with both the project and approved new development. Peak 1-hour levels would be about 15% lower without cumulative growth and peak 8-hour levels would be about 5% less.

COMMENT

Carl Imparato

"Regarding air quality impacts, we ask that the department investigate the possibility of requiring that the developer mitigate air quality impacts through reducing the emissions from other pollution sources. PG&E has to do that. Dow Chemical has to do that. If these office buildings are impeding air quality standards, probably they should be required to do that as well."

Sue Hestor

"On page 108, you look at the air quality mitigation and they refer you to transportation mitigation. And I go to page 105 and try to understand the transportation mitigation and exactly how much is going to be mitigated by what, and there are no numbers. How much are we mitigating by van pooling? Do you have a figure? Does you staff have a figure? How many people that would otherwise drive their automobiles, not otherwise ride transit, use vanpools? Is it an effect of 1/1,000 to 1 percent?"

"The air pollution impacts of cumulative downtown growth, specifically in the area around the freeway approaches on Mission street, are going over safe levels. You have not yet required anything that I can identify as an air quality mitigation.

"I will give you one: How many trees would they have to plant to mitigate carbon monoxide emissions of the construction? That is something that is a measurable thing. Trees can break carbon monoxide down into oxygen, which is better for the City.

"The City should seriously consider real mitigation, which is cleaning up the air and preventing it from becoming foul."

"What is the number, the irreducible number of people, that will drive their cars no matter what the charge is? Those people need to be mitigated. That kind of data your staff has. They can get it, because studies have been done.

"There are a certain number of people that are going to drive their cars even if they have to pay $5 a day on the bridge. You, I think, have the responsibility to mitigate all of those cars and to mitigate it by cleaning up the air and by doing things including maybe planting trees on the streets that the commuter cars come through at the developer's expense.

"That is a mitigation possibility. Let them plant trees on Lombard Street, in the Mission."

RESPONSE

The Bay Area Air Quality Management District (BAAQMD) has the authority to require offsets for new stationary sources, such as smokestacks, vents, storage piles, etc. The California State Air Resources Board (ARB) has authority to set emission standards for autos (mobile sources). The project is, however, an indirect source, one which attracts or generates auto traffic. Neither the ARB or BAAQMD has authority to require offsets for indirect sources.

It is conceivable that the City could require offsets through conditions of approval, but such a requirement could be subject to legal challenge.

The most successful carpool and vanpool programs have reduced traffic generation by up to 25% for large employers where transit is not available, such as in the Metropolitan Los Angeles area. These high percentages are due in part to employee commitment, employee subsidies and auto-disincentives such as preferential parking for car and vanpools that make car and vanpooling cheaper and more convenient than driving an auto. However, in downtown San Francisco there are transit systems already in place that are less expensive than driving a car. A car or vanpool system would compete with transit for riders so that new carpool and vanpool participants would

be both former auto and transit riders. The exact reduction in auto trips depends on administration of the program, the cost to users, and human nature. It is reasonable to expect a well-developed vanpool and carpool program to reduce auto trips by from 1% to 5%.[1]

Trees (vegetation) are a major sink for carbon dioxide and a minor sink for sulfur dioxide and nitric oxide but are not a sink for carbon monoxide. The identified sinks for carbon monoxide are destruction in the stratosphere, chemical reactions, and absorption into the soil.[2] Planting trees may have other benefits but would not affect carbon monoxide levels.

The public response to higher bridge tolls is a reduction in trips. However, the response to high toll levels is difficult to estimate. A $5.00 toll could discourage auto traffic, but would be politically unpopular.

COMMENT

Beverly Daniels, California Air Resources Board

> "The DEIR needs to identify the method used in determining the carbon monoxide concentrations addressed in Table 8, page 71. In addition, the DEIR needs to document the assumptions used in the calculations, e.g., the model used, emission factors, wind speed/angle, and stability class.
>
> "The DEIR identifies mitigation measures such as Muni passes, van/carpool programs, and bicycle facilities, however, these measures need to be quantified in terms of their air quality impacts.
>
> "The DEIR needs to determine the project's consistency with the applicable Air Quality Management Plan."

RESPONSE

The Bay Area Air Quality Management District's Guidelines for the Air Quality Impact Analysis of Projects was used to calculate carbon monoxide levels. Emissions factor for a 1983 Bay Area vehicle mix at 10 mph and an ambient temperature of 40° was 54.6 grams per mile. The BAAQMD live-source model assumes a wind forming a 22½° angle to the roadway. Windspeed

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[1]An estimate, jointly concurred to by George Nickelson, transportation planner and Don Ballanti, consulting meteorologist.

[2]Stern, Arthur C., Air Pollution, third edition, Vol. 1, 1976.

is assumed to be 1 mph for the 1-hour calculation and 2 mph for the 8-hour calculation. Stability is assumed to be Turner E for the 1-hour calculation, Turner D for the 8-hour calculation. See the previous Response regarding the mitigation of air quality impacts due to use of public transit and van/carpool programs.

The 1979 Bay Area Air Quality Plan is the applicable Air Quality Management Plan for the Bay Area. The Plan includes mobile source controls, stationary source controls and transportation control measures to reduce emissions. A review of these control measures reveals no apparent conflict between the project and the Plan.

RESPONSE

The practicality of using street trees to mitigate air quality impacts is discussed in the previous response.

IX. SEISMICITY

COMMENTS

John Elberling

"On page 83 we need discussion of the effects of a major quake. They project a B level quake as being possible on the building's exterior panels and exterior windows.

"If there's a possibility, as most people believe there would be, of some panels and some windows being shed we need some suggestions of mitigations as to how that could be limited or the effects avoided."

Carl Imparato

"Going to seismic considerations, older EIRs always mentioned the likelihood of the glass windows of the building popping out during an earthquake and causing casualties on the street. Not in this EIR and not in the recent EIRs is this mentioned.

"Is this no longer a problem? Maybe it isn't a problem; maybe they solved it. But we would like to see discussion like that to soothe our own feelings when we are walking around downtown."

Sue Hestor

"Facades and how buildings are designed to kill people on the street and save the structure of the building and what are the trade-offs in design of a building belong in an EIR.

"How does the architect design the building to withstand an earthquake?

"Do they so that the structure stands but things shear off, therefore making the people on the street of less value than the building structure?

"That is an evaluation that you should make, policy decisions based with that information and I would ask it to be incorporated into this and every other EIR and I have asked for it in all of my responses to these draft initial studies and the staff doesn't think, I guess, it's important."

RESPONSES

Exterior Windows and Panels. There are no requirements in the San Francisco Building Code (SFBC) specifying the seismic response of window glass. Exterior windows are considered part of, or attachments to, a structure's exterior wall[1] and are required to resist lateral loads, primarily from wind pressure of 30 pounds per square foot[2] in the 240-G Height & Bulk District.

Exterior windows, walls, panels and their connections are required to withstand movements of structures resulting from lateral seismic forces.[3] Specific requirements for the performance of panels and the connections between panels and walls are given in the code[4] to reduce the likelihood of exterior elements falling from buildings. According to SFBC Section 2314.D.2 these elements shall be designed for lateral forces according to a formula which produces a standard for the design of building elements which must be met or exceeded to withstand the force predicted for a major earthquake (Richter magnitude greater than 7.0). As stated on page 110 and 111 of the Draft EIR, the Spear and Main Street Office Building would meet the requirements of the SFBC. Much of SFBC Section 2314 was updated in the 1975 edition of the SFBC in light of the 1971 earthquake experiences in Los Angeles. Retrofitting to current seismic safety standards is required by Section 104.f. when additions; alterations, repairs, changes of use or occupancy occur in existing buildings.

To further reduce the possibility of panels falling during a major earthquake the panels should be made as light as possible consistent with the forces they must withstand and the connections could be double checked by an independent structural engineer. Other than making a large scale test model, for which there is currently no equipment available, there is probably no way to predict how any given structure or element would respond during a specific seismic event. There is no SFBC requirement for this type of test.[5]

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[1]SFBC, Section 2314.K.5.

[2]SFBC, Section 2308.E and Table No. 23-E.

[3]SFBC, Section 2314.A.

[4]SFBC, Section 2314.K.5 (a) through (g).

[5]Information in this paragraph is based on a telephone conversation with Raj Desai, C.E.1107, of Desai Associates Incorporated, Structural Engineers, San Francisco, CA, 19 January 1982.

Recent EIRs which have dealt with seismic response of window glass include One Sansome Building (EE78.334 certified 6 August 1981) and Daon Building (EE79.57 certified 12 June 1980). Recent EIRs which did not deal with window glass seismic response, since it is covered by the SFBC, include 315 Howard Street Office Building (EE79.196 certified 21 August 1980) and Neiman-Marcus Department Store (EE77.25 certified 21 December 1979).

Seismic Design. As stated in the DEIR on page 110, Section IV.E.2. Seismicity, the structure would be designed to meet the seismic design standards of the Structural Engineers Association of California. These standards have been adopted by the City and appear in the San Francisco Building Code (SFBC, 1975 Edition) as Sections 2314.A. through 2314.L. For specific design requirements the reader should refer to the SFBC.

COMMENT

Sue Hestor

"With regard to seismicity, I really think you have to look at seismicity as something more than all of this technical gobbledegook.

"There are no human beings in here. You are talking about clays and how the soil is going to percolate.

"You are adding a lot of people onto bay fill and the human consequences, the planning consequences and the policy consequences of that need to be put in black and white. It belongs in an EIR, because it is more dangerous to put people on bay fill than it is to put them on rock.

"What you are allowing and what you are encouraging on that block is a lot of people and that is an impact where their lives are much more threatened in an earthquake than someone's life six blocks west, where the soil conditions are different."

RESPONSE

Bay Fill. As stated in the DEIR on page 81, Section II.F.1. Soils, due to the lack of strength and stability of the near-surface soils (artificial fill, Upper Bay Mud) the proposed building would be constructed on piles which would penetrate the soft Upper Bay Mud to be supported in the stronger material (Lower Bay Mud, sand, gravel) at a greater depth. As stated

in the DEIR on page 110, Section IV.E.1. Soils, further geotechnical engineering investigations would be made to determine soil characteristics, foundation design and excavation techniques. Results of the studies would be incorporated in the structural design plans for the proposed building.

COMMENT

Sue Hestor

"This EIR and all of the other EIRs do not at all deal with how the City is going to deal with emergency planning and evacuation if an earthquake occurs. And we continue to have more and more people in a very small geographic area.

Will the bridges collapse?
How will people get out of the City?
Will there be a freeway system standing?
The Army Street interchange is going to collapse

"When you increase the peak day population you add much more in the level of complications to how the City deals in an emergency plan with evacuations.

"The City's plan is not good and that's why I am sure people don't want to talk about it.

"We are entitled to know and I think you are obligated to understand what kind of decisions you are really making if you pour people in and the City does not have the ability to evacuate or treat people if the area becomes more and more congested and more and more people can't get out of the City because the transportation system is down."

RESPONSE

Emergency Response.[1] The National Oceanic and Atmospheric Environment Study of 1972 indicated that the trans-bay bridges would not collapse during a great earthquake but would probably be closed while engineers checked them for structural damage. There is also a possibility (percentage unspecified) that liquefaction could occur in some of the access ramp areas causing settlement damage to bridge approaches. The trans-

[1] Information in paragraph 1 of this section comes from Tom Jenkin, Facility Planner/Architect, Mayor's Office of Emergency Services, telephone conversation, 28 December 1981.

bay ferry system would be used to bring emergency personnel into the City and could be used to evacuate casualties, but the majority of the commuter population would probably have to remain in the City for 72 to 96 hours following a great quake. Because the highway overpasses in the City have been retrofitted to resist seismic damage most of the freeway system is expected to be in operation. The Candlestick causeway (Highway 101) would probably be inundated and the Army Street interchange could be damaged. It would be possible to route traffic around these areas. The reader is directed to the Mayor's Office of Emergency Services for further information.

On page 111 of the DEIR the following paragraph has been added to IV. Mitigation E. Soils and Seismicity, 2. Seismicity:

> "An evacuation and emergency response plan would be developed by project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to insure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final occupancy permits."

X. ENERGY AND CONSTRUCTION MITIGATION

COMMENT

Chairman Rosenblatt

> "On page 113, where it deals with the question of why the building is not going to use operable windows, we have at least one example in the City where that has worked and it worked in part because that other building had bays similar to this one. It's a similar kind of design that might work in fact, particularly if they were willing to break down the zones in the building that they were willing to put under separate control."

RESPONSE

Dividing each floor of the building into zones with separate thermostats and equipment for space heating and cooling in a structure with operable windows would be a possibility. Such a system would entail higher initial equipment costs than the heating and cooling system proposed in the structure containing fixed (non-operable) windows. However, as noted on page 93 of the EIR, the estimated annual energy consumption for the project is 107,000 BTU per gross square foot of floor space, which is below Title 24 regulations which set a maximum allowable energy consumption for non-residential buidings with an occupancy of over 300 persons of 126,000 BTU per gross square foot of heated and cooled office space per year. Therefore, it is doubtful there would be any significant energy savings with operable windows and multiple thermostats. Such systems can be prone to poor operational practices by building occupants (i.e., open windows with heaters on). Open windows would also serve to increase interior building noise levels: fixed windows would reduce traffic noise by about 30 dBA (page 73 of the EIR).

COMMENT

Flint Nelson

> "Overall, the sponsor anticipates incorporating a number of energy efficient strategies to reduce the building's energy consumption. Most noteworthy is the fact that the sponsor intends to design the building to function 15 percent better than the Title 24 standards require.

"Two points are worthy of further comment:

1. The text on page 92 discusses air handling equipment. It implies, but does not state implicitly, that economizers would be installed on each floor. The sponsor should confirm the use of economizers, or explain why he does not plan to install them.

2. Also on page 92, the sponsor indicates that a lighting level of 2.75 watts per square foot will be used. This seems high, especially in view of the building's orientation and large use of glass. Daylighting appears to be easily incorporated, which suggests the lighting level can be reduced to 2 watts per square foot, or less. The sponsor's response to this would be appreciated."

RESPONSE

The following is added to the 3rd paragraph on page 92 of the EIR:

"Economizers would be installed on each floor."

Lighting design would meet the requirements of Title 24 of the California Administrative Code which allows a lighting level of more than 2.75 watts per square foot. Selective light switching would be installed around the perimeter of the building to reduce lighting demand near window areas. The average daytime lighting demand load would be about 2 watts per square foot, although the energy analysis assumed a lighting level of 2.75 watts per square foot.[1]

COMMENT

Chairman Rosenblatt

"The first comment is on the mitigation relating to the pile driving. It says restriction from 1 to 4 p.m.

"I would raise the question as to whether they want to be that explicit. That means it stretches out over a number of weeks for months, how long it goes on. Whether that isn't in fact better left to some kind of agreement between BBI and the project developer."

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[1]Vincent O'Kelly, O'Kelly and Schoenlank, Mechanical Engineers, telephone conversation, 30 December 1981.

RESPONSE

In the second paragraph on page X of the summary, reference to the hours to which pile driving would be limited should be between 1 p.m. and 9 p.m. Four p.m. is a typographic error. Construction activities in San Francisco are regulated by Ordinance 274-72, Section 2907, "Regulation of Noise." The ordinance requires a special permit for construction before 7 a.m. and after 8 p.m. The ordinance is enforced by complaint to the City Building Inspection Department. The Department may determine that pile driving after 8 p.m. may not be acceptable due to existing land uses in the area (see page 18 of the EIR, Setting, Land Use) and establish other hours for pile driving acceptable to the Department, including the possibility of weekends.

XI. ALTERNATIVES

COMMENTS

Carl Imparato

"We believe that the mixed use housing/commercial alternative discussed on pages 118-121, should be compatible with the department's proposal for Rincon Hill nearby, with the residential uses down there. We feel that the alternative is not being given serious consideration.

"They only look at larger, presumably market rate unit alternatives. They look at units of 1,217 to 1,517 square feet apiece. That's the only thing being considered as that alternative.

"We ask that the alternative studied be one with smaller units, one more compatible with demographics of the urban office workers, who are not families, basically singles or couples. The units should be smaller.

"We encourage serious consideration of this alternative in light of the compatibility with SPUR's South of Market plan that came out this year and we also encourage its significant reduction of adverse impacts vis-a-vis the proposed project."

John Elberling

"The alternative section, page 120, of this EIR, as the 101 Mission, when analyzing residential development or mixed use development with residential, insists on the need for an underground garage.

"Since we are all reading at the same time the Montgomery/Washington project, where in fact there is an above ground garage in a mixed use development, I don't see why they need to analyze such a needlessly expensive alternative.

"They can include parking on second and third levels, as well as digging a hole for it.

"So the analysis should reflect that more feasible alternative."

RESPONSE

It is true that more dwelling units of smaller size could be placed on the project site than provided for in the Housing/ Commercial/Office Use Alternative. A purpose of the mixed use alternative in the EIR, or an alternative that would contain solely housing on the site, is to assess the impacts of permitted land uses other than what is proposed for the project. The California Environmental Quality Act guidelines call for the discussion of alternatives to include those that could feasibly attain the basic objective of the project, focusing on alternatives capable of eliminating or reducing adverse environmental effects.[1] The impacts of residential use of the site as compared to the proposed project are noted on page 119-120 of the EIR. The reasons why the project sponsor is proposing office space rather than residential uses is discussed on pages 120-121.

No study is known that documents the need for or marketability of market rate residential units on or adjacent to the project block. Projections of dwelling unit demand by sizes have been conducted on a City-wide basis. For example, the Citizens Housing Task Force Report projects a need for 3,000 studio units, 12,000 1-bedroom units, 9,000 2-bedroom units, and 6,000 3-bedroom units to be constructed in San Francico between 1980-1989.[2] The block bounded by Spear, Mission, Steuart, and Howard Streets immediately east of the project site is within the Rincon Point redevelopment area. As called for in the Redevelopment Plan, the south portion of the block adjacent the Rincon Annex Post Office is to be developed with housing with a density range of 150 to 300 units per acre and with commercial and/or office use on the lower floors.[3] The Rincon Annex building would be restored to adaptive re-use and may include such uses as a local post office and/or museum in the lobby area, as well as retail and office use.

The City's plans for development of Rincon Hill south of the project site are not complete at this time. However, in the Mayor's Six-Point Program for Expanding Housing in San Francisco, it was noted:

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[1]State EIR Guidelines, California Administrative Code, Title 14, Section 15143(d), 1981.

[2]Report of the Citizens Housing Task Force, San Francisco, California, July 27, 1981, page 60.

[3]San Francisco Redevelopment Agency, Redevelopment Plan for the Rincon Point - South Beach Project Area, adopted and approved by the Board of Supervisors, Ordinance Number 14-81, January 5, 1980.

"Rincon Hill - this area contains approximately 100 acres of under-developed land, which could accommodate several thousand units of desirable high density housing, with dramatic views of the Bay and the financial district. Much of this land is owned by the state or federal government and is currently underutilized. It could be made available and developed for housing without significant displacement of people. Its proximity to the Bay Bridge presents a challenge in terms of buffering the traffic noise, but I am advised it can be done. We are prepared to help sponsor a major housing component for Rincon Hill."

Parking above ground rather than below grade would be a possibility for the Housing/Commercial/Office Use Alternative. However, the amount of interior building space for housing, commercial and office use would be less than proposed for the project because of the 240 foot height limit, and would not attain the project sponsor's basic objective of providing predominantly office space on the site.

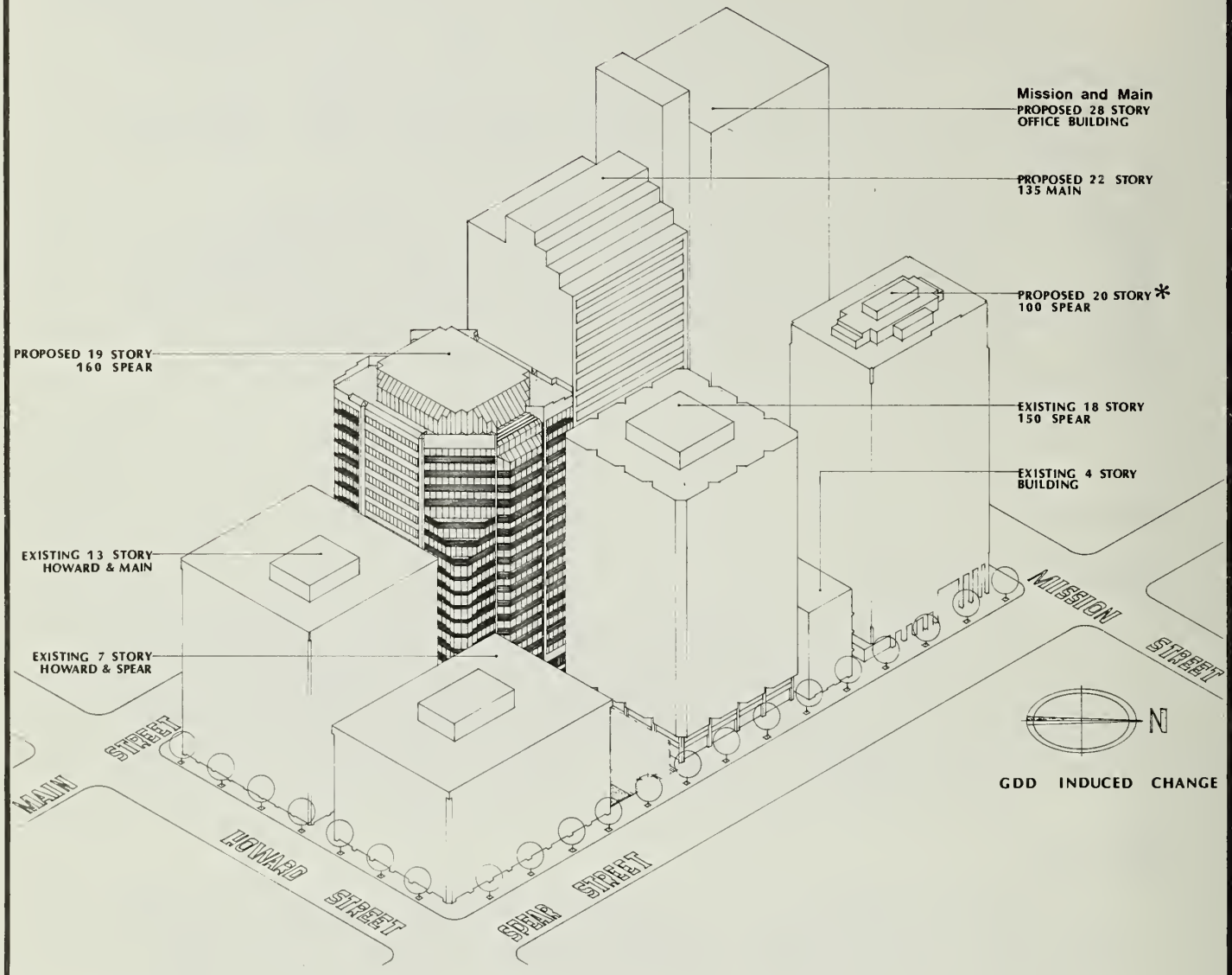
COMMENTS

Chairman Rosenblatt

"On page 130, where it talks about the induced changes from applying Guiding Downtown Development, it would be useful if we could have a sketch of what the design would look like relative to item 3 under Section A, as well as some visual concept of the result of the change in regulations and open space under Section C."

RESPONSE

An isometric drawing of the structure with reduced coverage at upper floors is provided on page 262, Figure R-2. The northwest and southeast corners of the building are shown stepped inward at the upper levels to reduce building bulk. To maintain the project's 306,500 gross square feet of interior floor area, it would be the project sponsor's preference that the square footage (about 22,500 square feet) removed from the structure would be contained in a separate attached building in what is currently proposed as open space surrounding the pedestrian walkway extending from Spear Street to the building, to maintain the project's 306,500 gross square feet of interior floor area.



* Formerly Known as 101 Mission.

Isometric Drawing of Project Block
(160 Spear Building Shown as Modified by Guiding Downtown Development)

Source: Jorge De Quesada, Architects

Figure No. R-2

An increase in open space of 1,110 square feet under Guiding Downtown Development guidelines would be about 10% of the project open space proposed, and from a visual standpoint would not appreciably alter project open space area as shown on Figures 4-8, pages 7-11 of the EIR. However, construction in the project's open space as explained above would reduce the open space below that required under Guiding Downtown Development. The amount of open space reduction would depend on the area of land the attached structure would occupy; less ground coverage would require a taller, attached structure.

XII. STAFF-INITIATED TEXT CHANGES

The 2nd and 3rd paragraphs on page 66 and the first paragraph on page 67 of the EIR are deleted. The following material is added to page 66:

"Pedestrian impacts along Main Street would also reflect the increases in pedestrian vehicle conflicts. Five office projects either are proposed or under construction in the block bounded by Mission, Main, Howard and Spear Streets (another project is proposed at the southeast corner of Spear/Howard). Additional office projects (i.e., the Federal Reserve Bank and Pacific Gateway projects) have been approved within 1 block of the Mission/Main/Howard Spear Streets block. These projects would cumulatively affect pedestrian travel along Main Street.

"There are currently 7 driveway curb cuts along the east side of Main Street between Mission and Howard Streets. These driveways total about 100 lineal feet of the 600-foot block face. Six of the 7 driveways serve freight loading needs and have minimal vehicular activity. The driveway adjacent to the Spear/Main Street project site now serves a 110-space surface parking lot. This lot primarily serves long-term employee parking demand, and vehicular activity therefore is focused at the morning and evening commute periods (7:00-9:00 a.m. and 4:00-6:00 p.m.).

"The existing sidewalk along Main Street is partially obstructed by planters boxes, newsstands, etc. and the effective sidewalk width is about 8-12 feet. The width of Main Street (between curbs) is 52.5 feet.

"The proposed Spear and Main Street, 135 Main Street and Mission/Main Street projects would involve 5 driveway curb cuts along Main Street. An additional driveway curb cut would remain on Main Street adjacent to an existing office building at Main/Howard Streets. The 5 new driveways and 1 remaining driveway would total about 95 lineal feet of the 600-foot block face. The new driveways would occur as follows (Figure 21 depicts existing and proposed driveways and sidewalk and street widths):

- Spear and Main Street: 2 truck docks and 36 parking spaces using separate driveways;

- 135 Main Street: 2 truck docks and 22 parking spaces using separate driveways;

- Mission/Main Street: 46 parking spaces and loading/unloading functions using a single driveway.

"Assuming that each of the proposed parking facilities would be designated for tenant (long-term) use, the parking turnover rate would occur primarily during peak hours. A turnover of 50% during the p.m. peak hour would result in a range of 10-25 vehicles crossing the peak hour pedestrian flow at each of the parking facilities' driveways. The truck activity at truck dock driveways probably would be minimal during peak pedestrian flow periods. Each of the proposed projects along Main Street would generate about 50-75 truck stops daily with 5-7 truck stops during the peak hour.[1]

"While the number of driveway curb cuts would be reduced (from 7 to 6, including the existing driveway at the Howard and Main Street Building) with the proposed projects, it is recognized that the vehicle activity at the new driveways generally would be higher than it is currently. This would exclude, however, the driveway now serving the parking lot on the Spear/Main Street site which experiences higher vehicle activity than projected at any of the proposed driveways. The elimination of the individual projects' parking garages would reduce pedestrian-vehicle conflicts at driveways. If the projects' parking garages were eliminated, a joint-use parking facility would need to be constructed in close proximity to the projects. The feasibility of such a joint-use facility, however, would be affected by land availability, funding coordination between developers, etc. It is probable that joint-use parking could only be provided through a government entity such as the City Parking Authority. The proposed projects would result in an effective sidewalk width of about 12 feet along Main Street. As discussed in the EIRs for the various projects, the pedestrian flows would increase by about 50-75%.

"No coordinated plan has been developed for curb parking designations along Main Street. The Spear/Main Street project would provide 5 truck/van loading spaces, 2 spaces in excess of the recommended number cited in the City's downtown development guidelines. It is therefore not

---

[1]San Francisco Department of City Planning, Final EIR, 315 Howard Street Office Bulding, EE 79.196, certified 21 August 1980.

anticipated that on-street truck loading zones would be needed for the proposed project. The existing short-term parking would continue to be an appropriate curb designation adjacent to the Spear/Main Street projects.

"The proposed intrablock pedestrian system (Figure 21, page 68) could link with a mid-block crossing of Main Street. This mid-block crossing eventually could allow pedestrians to travel under the freeway off-ramp, through the Pacific Gateway site, and across Beale Street, at a signalized mid-block crosswalk.[1] Pedestrians could gain access through an existing alley to the Transbay Terminal. If the foregoing pedestrian route could be implemented, an alternative pedestrian route would be available and mid-block pedestrian crossings of Main Street would be expected to increase. The mid-block crossing probably would be used most heavily during the peak commute hours. During these periods, office employees would be traveling via AC or Golden Gate Transit, walking to/from the Transbay Terminal. The study block would contain about 1.6 million square feet of office space which would generate about 700 peak hour trips via AC or Golden Gate Transit.[2] Many of the pedestrian trips to/from these carriers would be on crosswalks at Mission or Howard Streets. In addition, Golden Gate passengers could access the Civic Center commute routes at their Folsom/Main terminus. Based on these factors, it is estimated that 200 to 300 of the AC and Golden Gate commuters would make a mid-block crossing during the peak hour. It would be tenuous to project what portion of these pedestrians actually would use a mid-block crosswalk. For a number of reasons, pedestrians probably would make random crossings of Main Street outside a crosswalk. Main Street is a 2-lane street and pedestrian crossings are facilitated by this width. Because the relatively light traffic flow is one-way northbound and is "metered" by the signal at Howard Street, traffic gaps would be prevalent. Pedestrians would tend to cross during these gaps and their crossings could occur throughout the block. The foregoing factors suggest that the actual use of a mid-block crosswalk would be less than 200-300 peak hour persons.

"If a mid-block crosswalk were provided, the San Francisco Public Works Department would require that it be signalized.

---

[1]It is noted that Southern Pacific has not approved public crossing of its site. A parking lot would occupy most of the Pacific Gateway site.

[2]San Francisco Department of City Planning, Guidelines for Environmental Evaluation - Transportation Impacts, July 1980, revised October 1980.traffic

A signal would offer a regulated pedestrian crossing of Main Street. A signal, however, would introduce a new constraint on traffic flow. The nature of this constraint would depend on the type of signal installed. If the signal were activated by a pedestrian push button, vehicle traffic would be interrupted whenever pedestrians wish to use the crosswalk. These interruptions, however, could be limited through timing adjustments of the signal controller. Based on the peak hour traffic flow and the assumption that one-fourth of the signal timing would be devoted to pedestrian crossings, it is not projected that vehicle queues would affect the Main/Howard Street intersection. The traffic volumes and projected pedestrian crossings do not indicate a need for an elevated pedestrian crossings of Main Street. If provided, such a structure probably would be used by a small percentage (less than 10%) of pedestrians.

"In summary, this analysis does not conclude that a mid-block crossing of Main Street is warranted. If implemented, such a crossing would need to be signalized (as per DPW) and the signal would be disruptive to traffic flow. In addition, the mid-block crossing would not link with a mid-block pedestrian way on the west side of Main Street (through the Pacific Gateway project). Due to the foregoing factors, a mid-block crossing would not be recommended. at this time. If, however, the crossing could be implemented without a traffic signal and would link with a walkway through the Pacific Gateway project, a mid-block crossing could be of value."

On page 107 of the EIR the following material is added:

"The following mitigation measures have been rejected by the project sponsor but could be required as conditions of project approval:

10. The project sponsor or future employers of the tenants in the project could provide monthly local and regional transit passes to all employees to reduce vehicle trips and provide on-going revenue to transit operators.

11. All on-site parking could be eliminated or all long-term parking could be prohibited. Tenant parking is proposed by the project sponsor because it is considered necessary to meet the minimum needs of the tenants expected to lease office space. Short-term parking on the project site is also rejected by the project sponsor.

A proposal to eliminate all on-site parking has been rejected by the project sponsor. Tenant parking (35 spaces) is proposed by the project sponsor because it is considered necessary to meet the minimum needs of the tenants expected to lease office space."

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X. BIBLIOGRAPHY

Association of Bay Area Governments, 1979 Bay Area Air Quality Plan, January 1979.

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SAN FRANCISCO

CITY PLANNING COMMISSION

RESOLUTION NO.9312

WHEREAS, A draft environmental impact report, dated November 6, 1981, has been prepared by the Department of City Planning in connection with EE80.349 Spear and Main Street Office Building: A 19-story office building with about 279,000 square feet of office, 7,460 square feet of retail, and about 36 parking spaces; requiring discretionary review on the property described as follows:

EE80.349 Spear Street between Spear Street and Main Street, in the center of the block bounded by Mission and Howard; Lots 5, 10 and 11 in Assessor's Block 3717.

WHEREAS, The Department duly filed a notice of completion of the draft report with the Secretary of the California Resources Agency, gave other notice and requested comments as required by law, made the report available to the general public and satisfied other procedural requirements; and

WHEREAS, The City Planning Commission held a duly advertised public hearing on said draft environmental impact report on December 10, 1981, at which opportunity was given for public participation and comments; and

WHEREAS, A final environmental impact report, dated February 11, 1982, has been prepared by the Department, based upon the draft environmental impact report, any consultations and comments received during the review process, any additional information that became available, and a response to any comments that raised significant points concerning effects on the environment, all as required by law; and

WHEREAS, On February 11, 1982, the Commission reviewed the final environmental impact report, and found that the contents of said report and the procedures through which it was prepared, publicized and reviewed comply with the provisions of the California Environmenta Quality Act, the Guidelines of the Secretary for Resources and San Francisco requirements;

THEREFORE BE IT RESOLVED, That the City Planning Commission does hereby find that the Final Environmental Impact Report, dated February 11, 1982 concerning EE80.349 Spear and Main Street Office Building is adequate, accurate and objective, and does hereby CERTIFY THE COMPLETION of said Report in compliance with the California Environmental Quality Act and the State Guidelines;

AND BE IT FURTHER RESOLVED, That the Commission in certifying the completion of said Report does hereby find that the project as proposed will have a significant effect on the environment, in that it will cause a demand for housing in the city and it will contribute to the cumulative increase in transit ridership and pedestrian and vehicular traffic and parking deficit, and air quality and housing impacts produced by development approved and under construction in the downtown area.

I hereby certify that the foregoing Resolution was ADOPTED by the City Planning Commission at its regular meeting of February 11, 1982.

Lee Woods, Jr.
Secretary

AYES: Commissioners Karasick, Kelleher, Klein, Nakashima, Rosenblatt and Salazar.

NOES: Commissioner Bierman.

ABSENT: None.

PASSED: February 11, 1982

APPENDIX A

INTERSECTION CAPACITY ANALYSIS AND LEVEL OF SERVICE DEFINITIONS

Source: Service Level Calculations performed by George W. Nickelson

INTERSECTION CAPACITY ANALYSIS

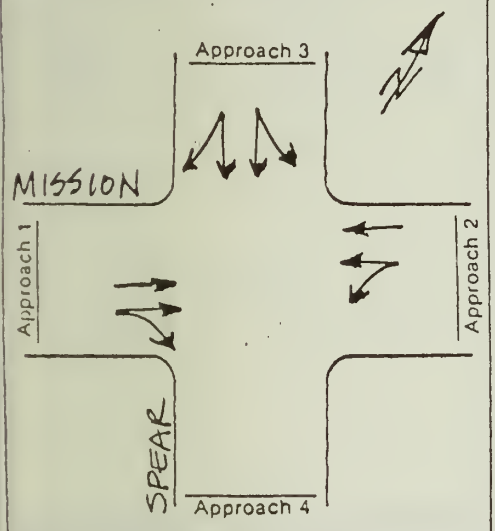
4:30 - 5:30 PM

Intersection MISSION / SPEAR Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC

(COUNT CONDUCTED ON 16 JULY 1980)

1. Identify Lane Geometry



4. Left Turn Check

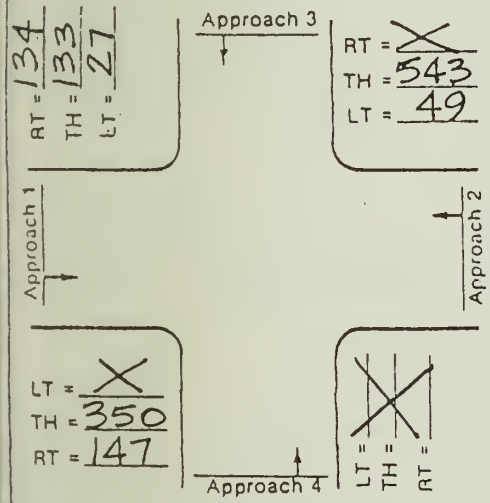
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

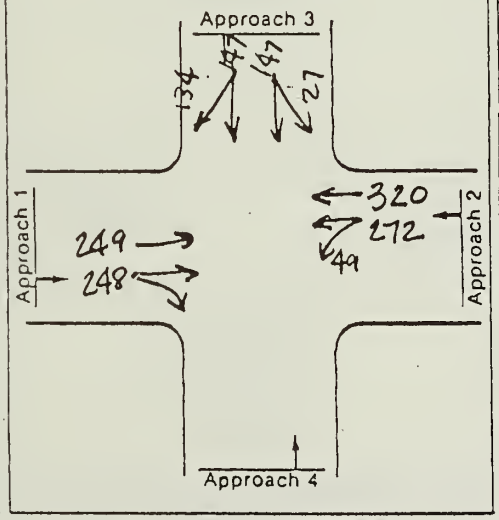
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

147 + 320 + — + —

= 467 vph

8. Intersection Level of Service

A

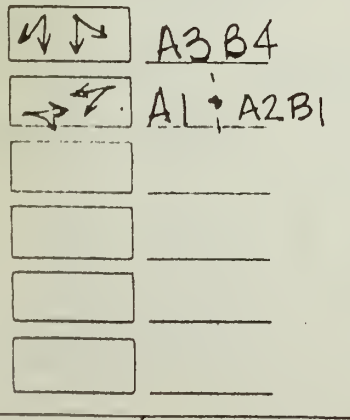
9. Recalculate

Geometric Change _____

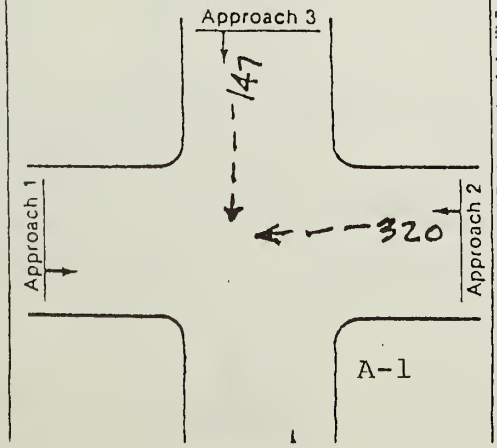
Signal Change _____

Volume Change _____

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

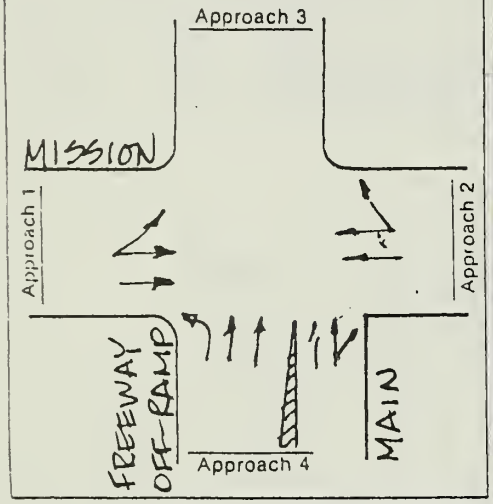
INTERSECTION CAPACITY ANALYSIS

7:30-8:30 AM

Intersection MISSION / MAIN Design Hour A.M. PEAK

Other Conditions EXISTING TRAFFIC
(COUNT CONDUCTED ON 30 APRIL 1981)

1. Identify Lane Geometry



4. Left Turn Check

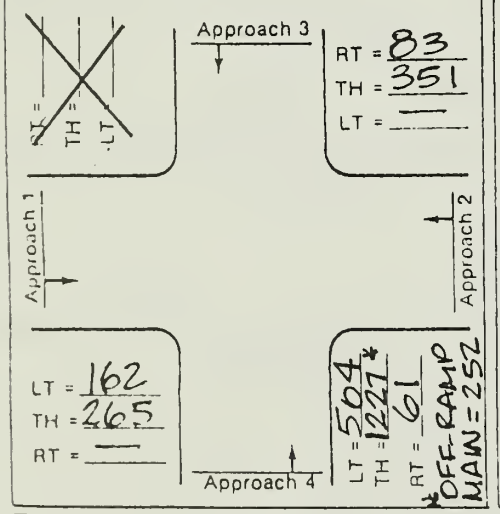
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

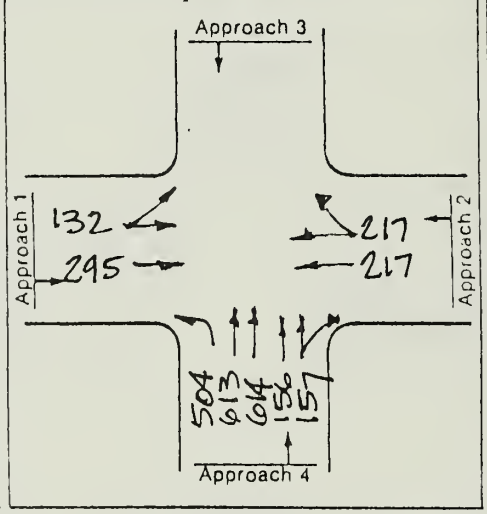
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

614 + 217 + 162 + — = 993 vph

8. Intersection Level of Service

B

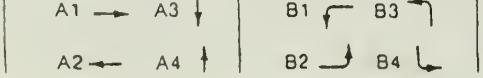
9. Recalculate

Geometric Change _____

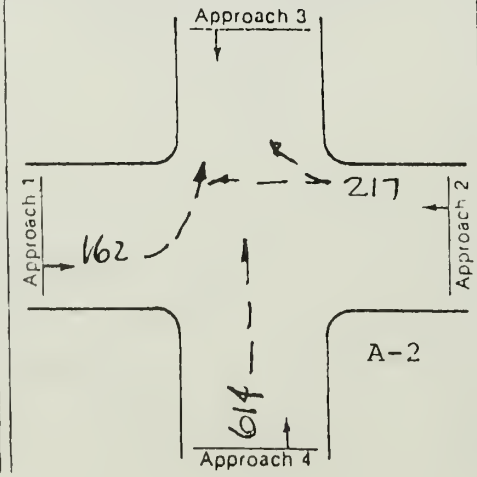
Signal Change _____

Volume Change _____

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

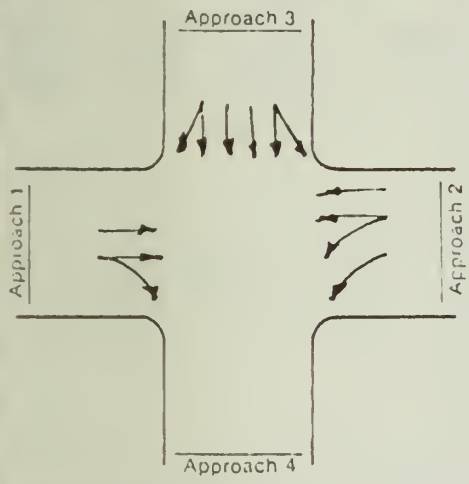
INTERSECTION CAPACITY ANALYSIS

4:30-5:30pm

Intersection MISSION / BEALE Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC
(COUNT CONDUCTED ON 2 FEBRUARY 1981)

1. Identify Lane Geometry



4. Left Turn Check

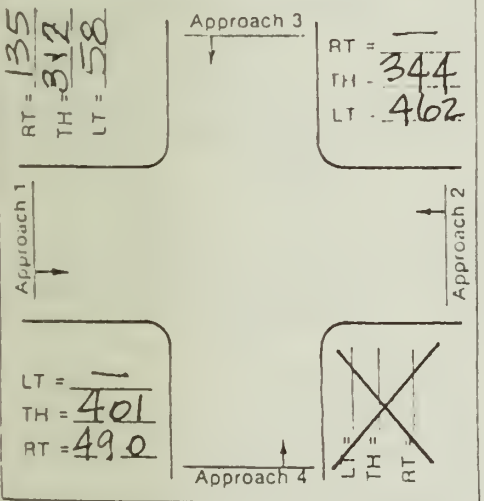
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

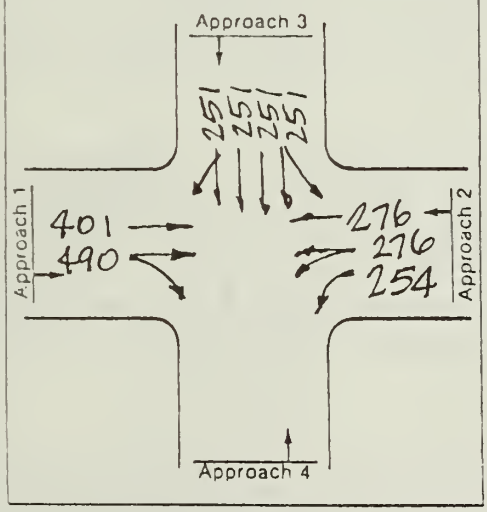
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

3Ø

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

490 + 251 + 276 + — = 1017 vph

8. Intersection Level of Service

C

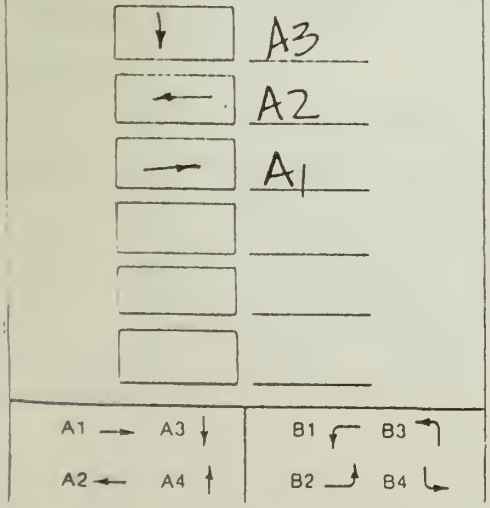
9. Recalculate

Geometric Change _____

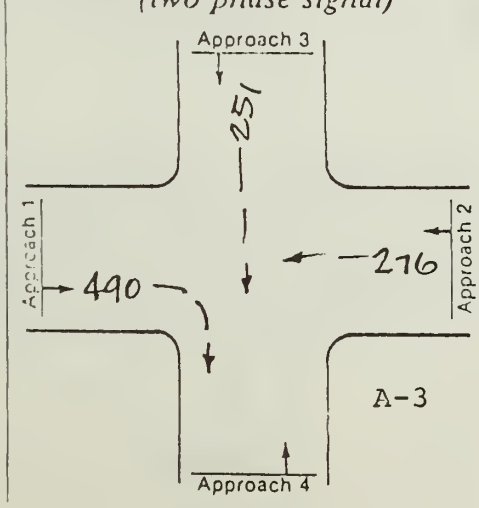
Signal Change _____

Volume Change _____

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

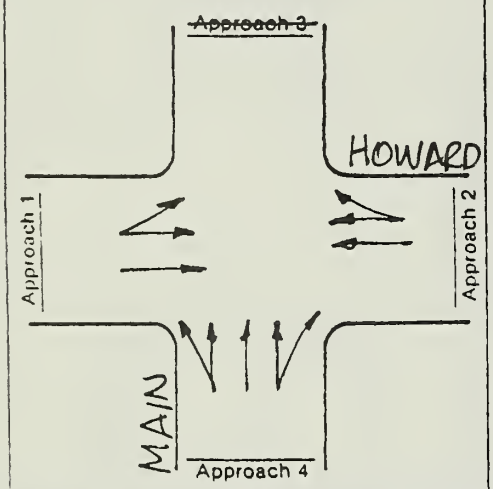
INTERSECTION CAPACITY ANALYSIS

4:30-5:30 pm.

Intersection HOWARD / MAIN Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC VOLUMES
(COUNT CONDUCTED ON 30 OCTOBER 1980)

1. Identify Lane Geometry



4. Left Turn Check

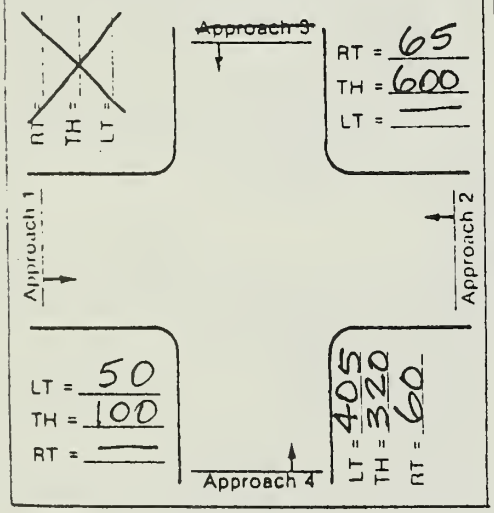
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

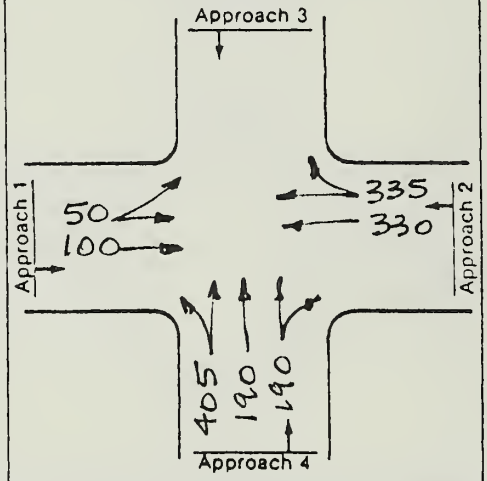
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

50 + 335 + 405 + — =

= 790 vph

8. Intersection Level of Service

A

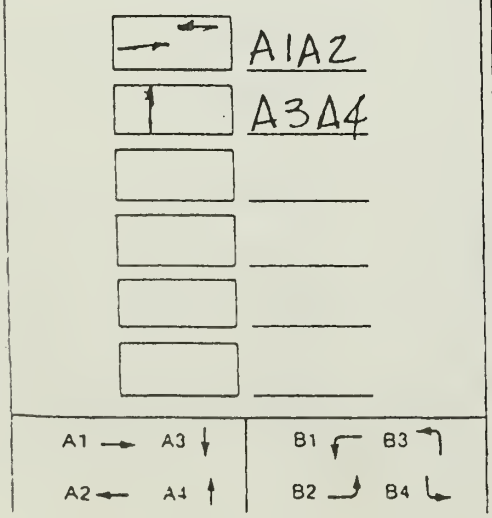
9. Recalculate

Geometric Change _____

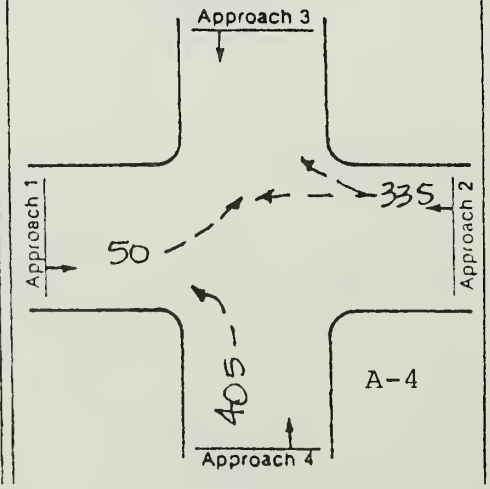
Signal Change _____

Volume Change _____

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

LEVELS OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service A

Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.

Level of Service B

Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.

Level of Service C

Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.

Level of Service D

Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.

Level of Service E

Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can geenrally be described as poor.

Level of Service F

Level of Service F represents a jammed condition. Backups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.

APPENDIX B

Microclimate Impact Study

I. INTRODUCTION

Architects, engineers, and city planners designing urban structures are limited by the lack of information on wind effects due to structures, such as pedestrian discomfort and wind-caused mechanical problems with doors, windows, and ventilating systems. Once a structure is built, remedial measures (if they exist at all) usually are expensive.

It is virtually impossible to anticipate, by analysis or intuition, the winds that will be caused by a structure, as they are determined by complex interactions of forces. Fortunately it is possible to predict the wind patterns and pressures around structures by testing scale models in a wind tunnel which can simulate natural winds near the ground. This allows the designer to foresee possible environmental and mechanical problems and alleviate them before the building is erected.

Data from wind tunnel tests can be combined with climatological data in analysis of the effect of a proposed structure on pedestrians in terms of human comfort. The frequency distribution of wind strengths at pedestrian level, combined with temperature data and shadow patterns of the proposed structure and its surroundings, can be used to forecast comfort at pedestrian levels.

II. SUMMARY

Wind tunnel tests of a scale model was conducted for the existing site and the proposed project for the two most frequent wind directions in San Francisco. The project site was found to have generally low winds for both the westerly and northwesterly directions. The wind environment would not change with construction of the proposed project, as the project area is sheltered by upwind highrises. The project would increase shadows in winter along the surrounding streets. The pedestrian walkway extending to Spear Street from the east face of the building would be shaded in all seasons except summer.

III. BUILDING AND SITE DESCRIPTION

The project site is near the center of the block bordered by Main Street, Mission Street, Howard Street and Spear Street. The site is located generally east of the downtown highrise corridor along Market Street.

The proposed building would be 19 stories high. A rectangular tower would front on Main Street. The main entry way would be from Spear Street to the east side of the office tower through a pedestrian walkway.

IV. MODEL AND WIND TUNNEL FACILITIES

Model

Scale models of the proposed building and the structures surrounding the area for a distance of several blocks were constructed of polystyrene and urethane foams at a scale of 1 inch equals 30 feet. Building configurations and heights were obtained from the Sanborn maps at the San Francisco Department of City Planning and from site visits. All proposed projects and projects under construction near the site were included in the model.

Wind Tunnel Facilities

The Environmental Impact Planning Corporation boundary layer wind tunnel was designed specifically for testing architectural models. The working section is 7 feet wide, 43 feet long, and 5 feet high. Wind velocities in the tunnel can be varied from 3.5 mph to 13 mph. The flow characteristics around sharp-edged objects, such as architectural models, are constant over the entire speed range. Low speeds are used for tracer smoke, high speeds for windspeed measurements.

Simulation of the characteristics of the natural wind is facilitated by an arrangement of turbulence generators and roughness upwind of the test section. These allow adjustments in wind characteristics to provide for different scale models and varying terrain upwind of the project site.

Measurements of windspeed around the model are made with a hot-wire anemometer, a device that relates the cooling effect of the wind on a heated wire to the actual windspeed. The flow above the city is measured by a Pitot tube connected to a micromanometer. The Pitot tube and micromanometer measure directly the pressure difference between moving and still air. This pressure difference is then related to the actual windspeed. Flow visualization is achieved by use of floodlit smoke.

V. TESTING METHODOLOGY

Simulation of Flow

The most important factors in ensuring similarity between flow around a model in a wind tunnel and flow around the actual building are the structure of the approach flow and the geometric similarity between the model and the prototype. A theoretical discussion of the exact criteria for similarity is not included in this paper, but may be found elsewhere (Cermak, 1966, or Cermak and Arya, 1970)

The variation of windspeed with height (wind profile) was adjusted for the scale of the model and the type of terrain upwind of the the site. The profiles used were those generally accepted as adequately describing the flow over that type of terrain (Lloyd, 1967).

Testing Procedure

The windflow characteristics of the site in its current state were investigated to ascertain the present wind environment. Windspeeds and wind directions at specified points throughout the site were measured and recorded. Wind direction was measured by releasing smoke at each point and recording the direction in which the smoke traveled. Windspeed measurements were made at the same points, at a scale height of 5 feet above the ground. A hotwire anemometer probe is required to make these measurements within a fraction of an inch of the model surfaces. The probe is repeatedly calibrated against the absolute reading of a Pitot tube and micromanometer. Velocity readings close to the model are generally accurate to within 10% of the true velocity. The grid of measurement points extended to the point where project impacts were less than 10% of existing windspeeds.

Measurements for the building are made by keeping the probe in place while replacing the existing buildings with each proposal under consideration. The grid of measurement points extended to the point where project impacts were less than 10% of existing windspeeds.

Before and after each test run, a calibration measurement was made above the model. The purpose of these measurements was to relate the wind tunnel measurements to actual wind records from U.S. Weather Service wind instrumentation located on the Federal Building at 50 Fulton Street.

VI. TEST RESULTS AND DISCUSSION

Tests of windspeed and wind direction were conducted for 2 wind directions.

Measured windspeeds are expressed as percentages of the calibration windspeed, which corresponds to the actual windspeed at the San Francisco Weather Station. Thus, a plotted value of 52 means that the measured windspeed is expected to be 52% of the windspeed recorded by the Weather Service when winds are from that particular direction.

The plotted values can be interpreted in terms of general "windiness" using the scale below. This scale is subjective and is based on information gathered from similar studies in San Francisco.

Velocity	Percentage of Calibration Windspeed
Low	0-0.19
Moderately low	0.20-0.29
Moderate	0.30-0.49
Moderately high	0.50-0.69
High	0.70-1.00
Very high	greater than 1.00

The plotted values are not actual windspeeds, but ratios. Thus, a point having a "very high" windspeed ratio would still experience light winds on a near-calm day. Likewise, a point found to have "low" winds could experience significant winds on a windy day.

Wind direction is indicated by an arrow pointing in the direction of flow. Where wind direction fluctuated, two arrows representing the principal flow directions were plotted.

Areas of fluctuating winds are normally turbulent, as are areas of spiraling motion; the latter are denoted by curved arrows.

Northwest Wind

Northwest winds occur 12 to 39% of the time in San Francisco, depending on the season. (In meteorology, a northwest wind blows from the northwest). Northwesterly and westerly winds are the most frequent and the strongest winds at all seasons in San Francisco. Northwest winds exceed 13 miles per hour 35% of the time and 25 miles per hour 3% of the time in summer. (These windspeed categories are used because wind frequency data are broken down into categories of 4-13 mph, etc.) Wind frequencies and speeds are lower in spring, fall, and winter.

Existing site conditions under northwest winds are shown in Figure 1. Existing windspeed ratios are shown in Figure 1. Ratios are low along near all streets near the project site.

No changes in the wind pattern or speeds were found for the proposed project (Figure 2). The pedestrian walkway was found to have low winds.

West Wind

West winds occur between 15 and 40% of the time, depending on the season. They exceed 13 miles per hour 20% of the time and 25 miles per hour 7% of the time in summer. Wind strengths and frequencies are somewhat lower in spring, fall and winter.

Existing conditions for west winds are shown in Figure 3. Windspeed ratios are low to moderately low along near the site.

Only minor changes in the wind pattern and measured windspeed ratios would occur for the proposed project (Figure 4). The pedestrian walkway would have low windspeed ratios.

VII. SHADOW PATTERN ANALYSIS

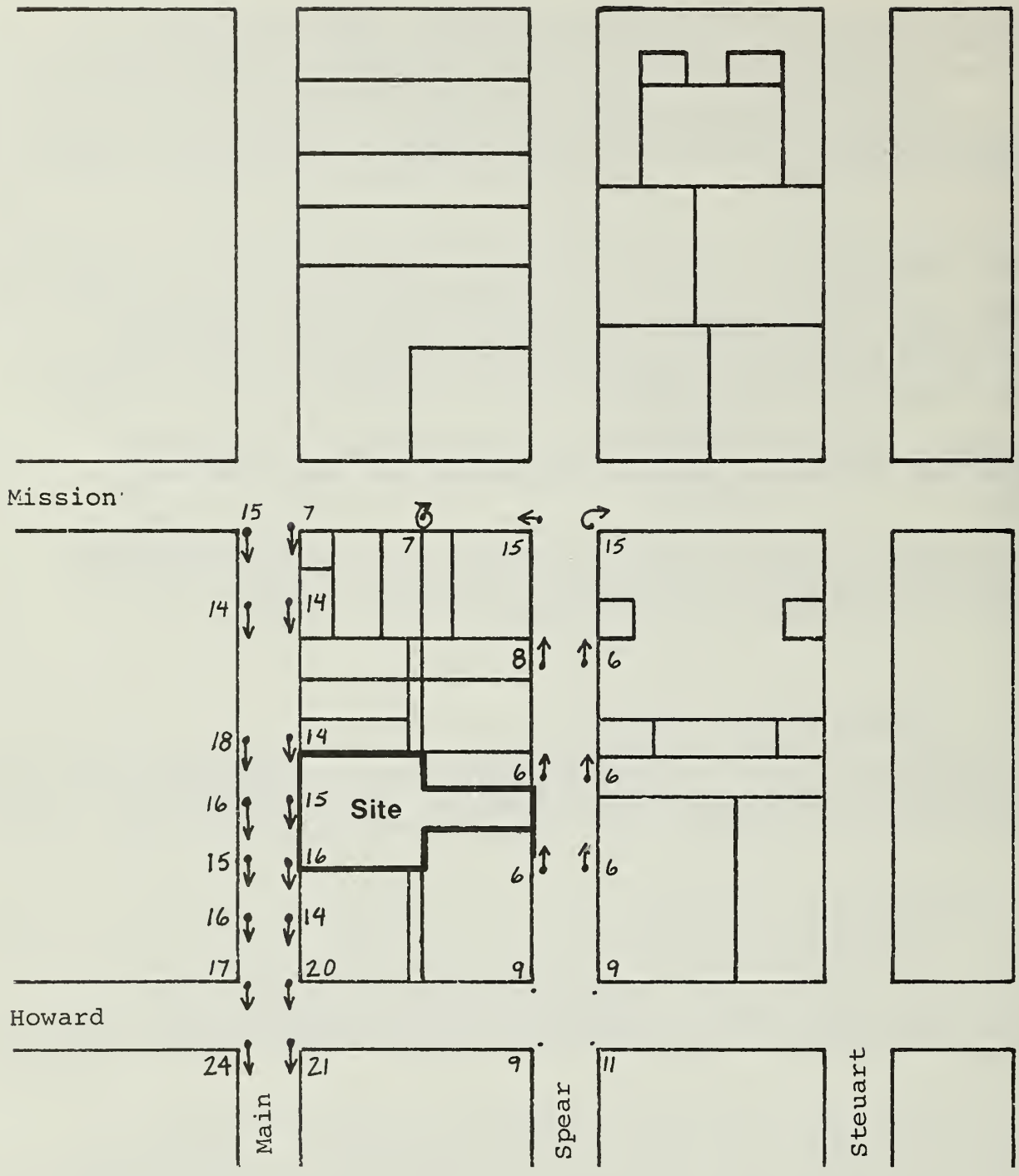
Sun-shade patterns for the first day of each season at 8 a.m., 1 p.m. and 4 p.m. are shown in Figures 5 to 7. The project would increase infill shadows along the surrounding streets.

VIII. MITIGATION MEASURES

There are 2 types of mitigating measures for wind. The first is to make major design changes to reduce winds near the project, such as different building orientations or changes in size or shape.

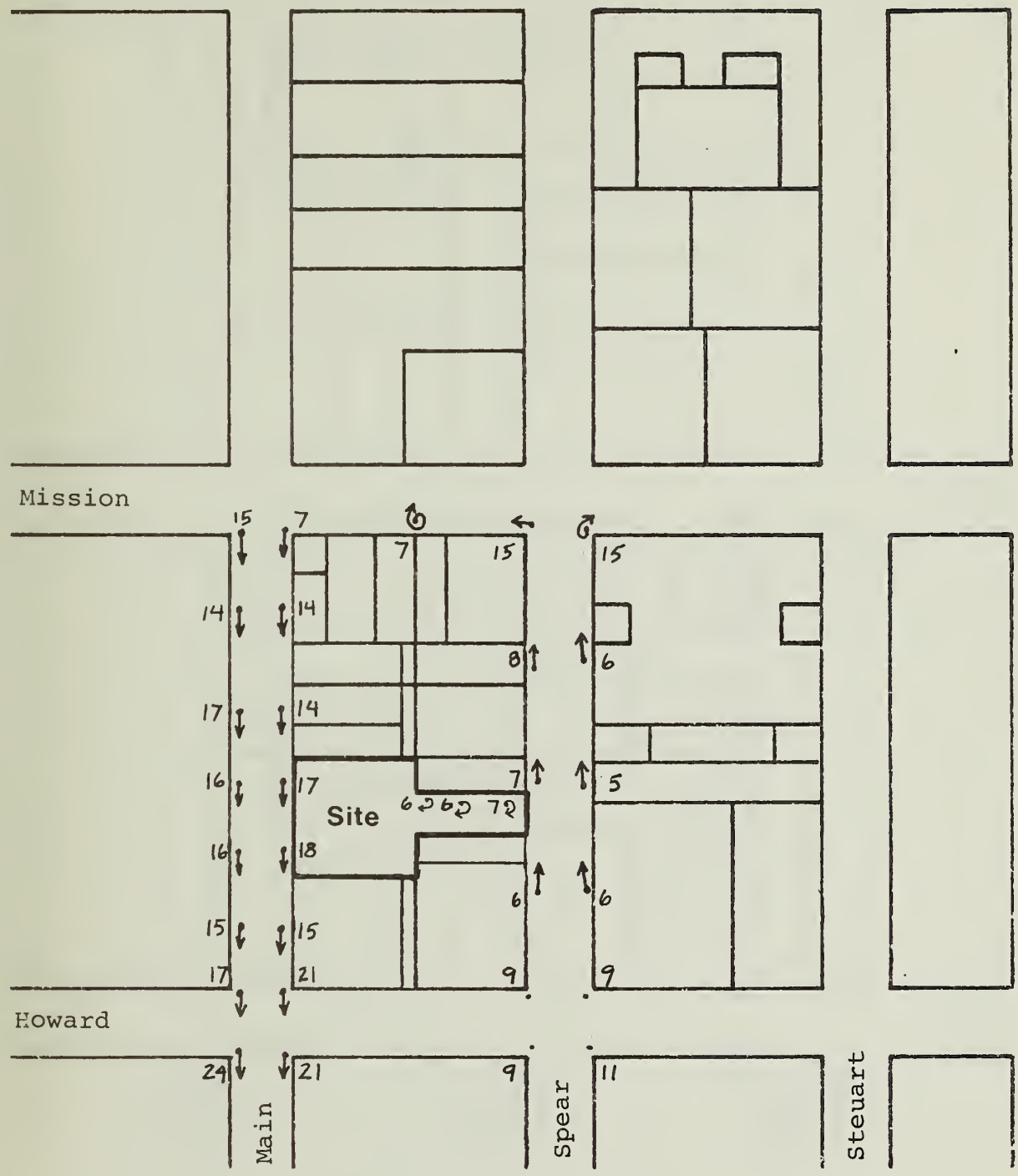
The second type of mitigation measure involves additions to the project that would provide local shelter for pedestrians. Small structures such as kiosks for newspaper or flower vendors, telephone booths, and shelters at bus stops can serve in this way. Similarly, street trees and other vegetation can function as windbreaks.

Because the proposed project does not significantly alter the existing wind environment, mitigation measures for wind do not appear necessary.



Existing Site
Northwest Winds

Figure No. 1



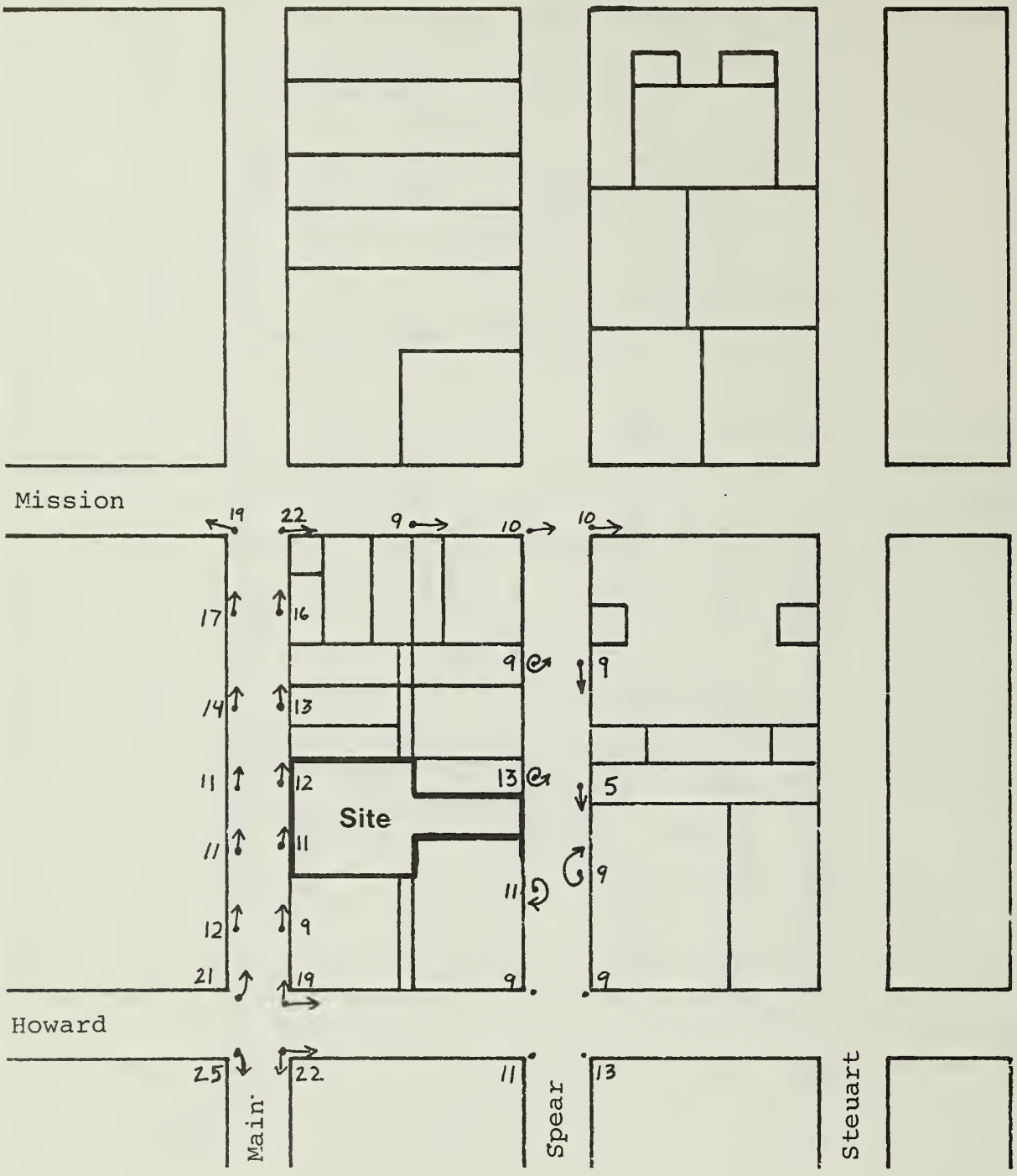
Proposed Project
Northwest Winds

North

0 75 150 300

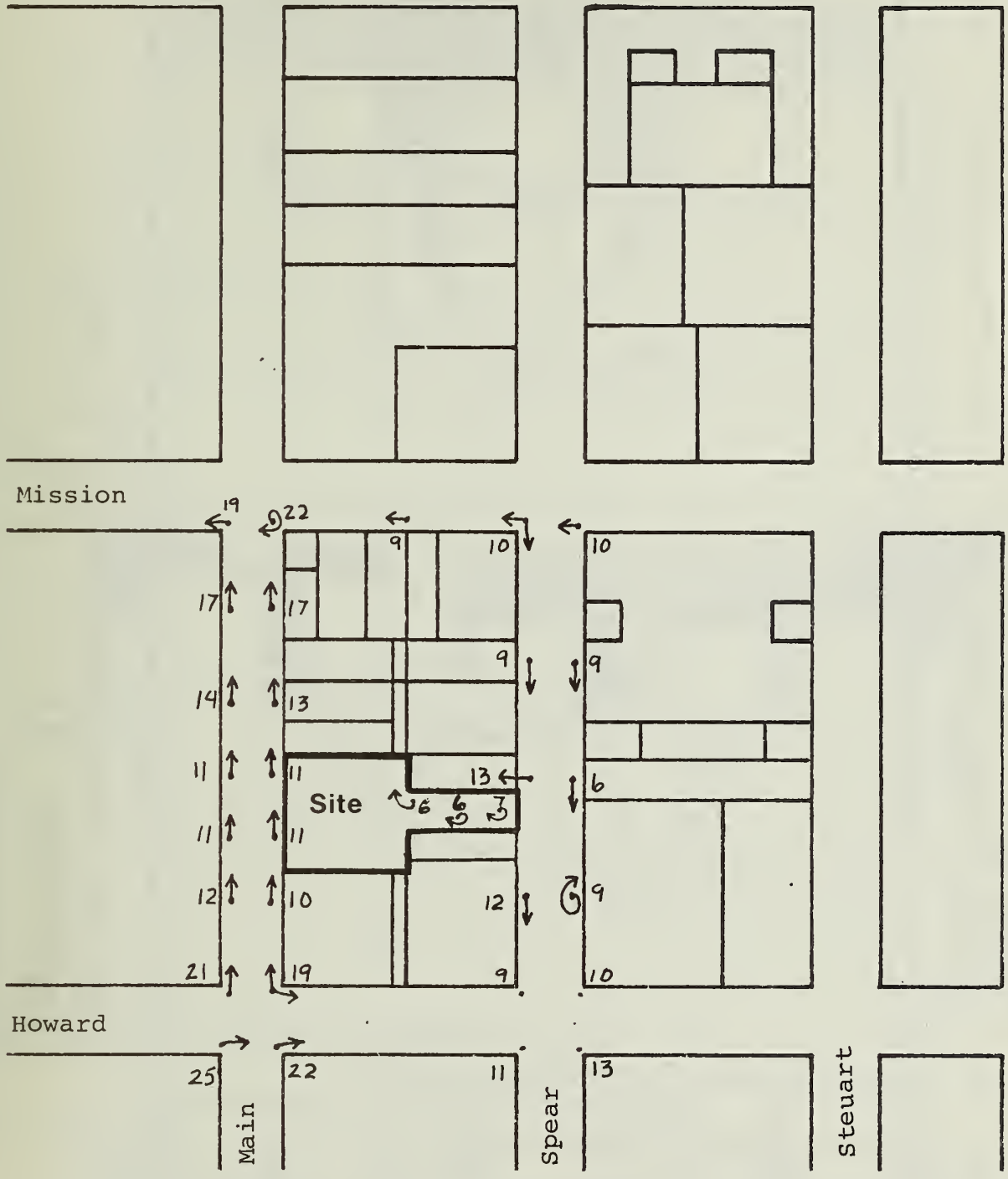
Scale Feet

Figure No. 2



Existing Site
West Winds

Figure No. 3



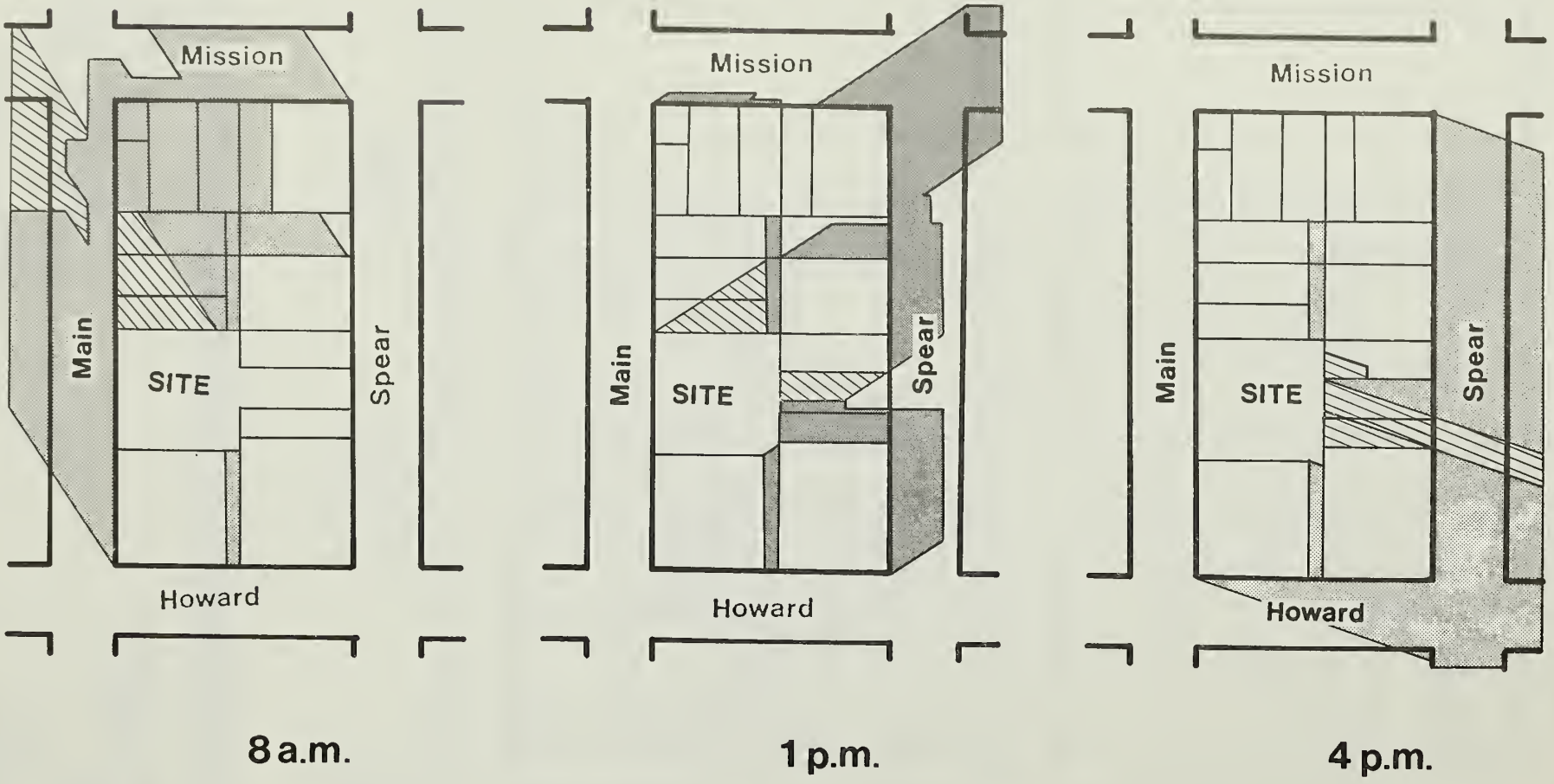
Proposed Project
West Winds

North

0 75 150 300

Scale Feet

Figure No. 4



North

0 75 150 300

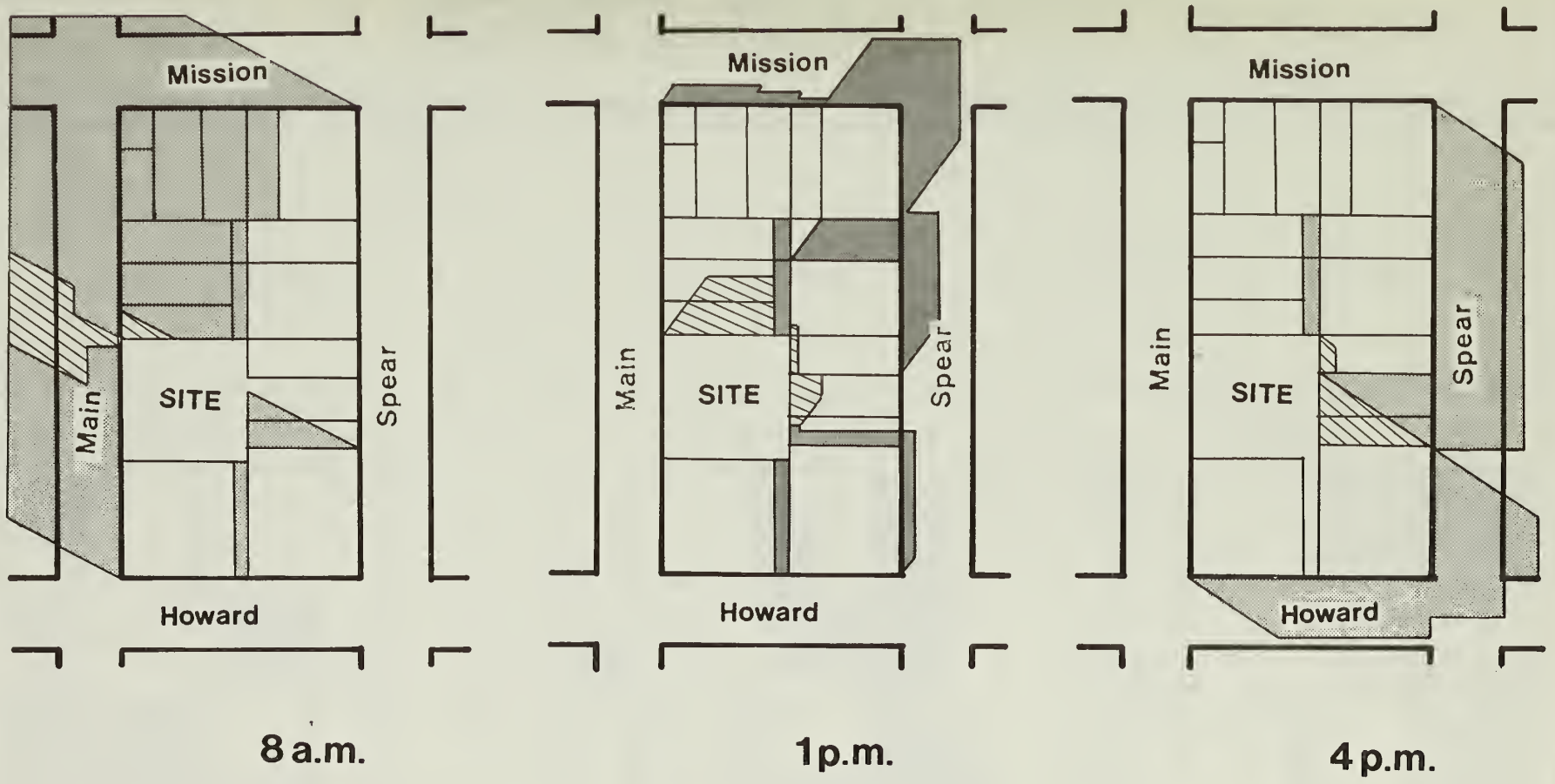
Scale Feet

Figure No. 5

Shadow Patterns - March 21 and September 21

Existing Shadows

Shadows added by Project



North

0 75 150 300

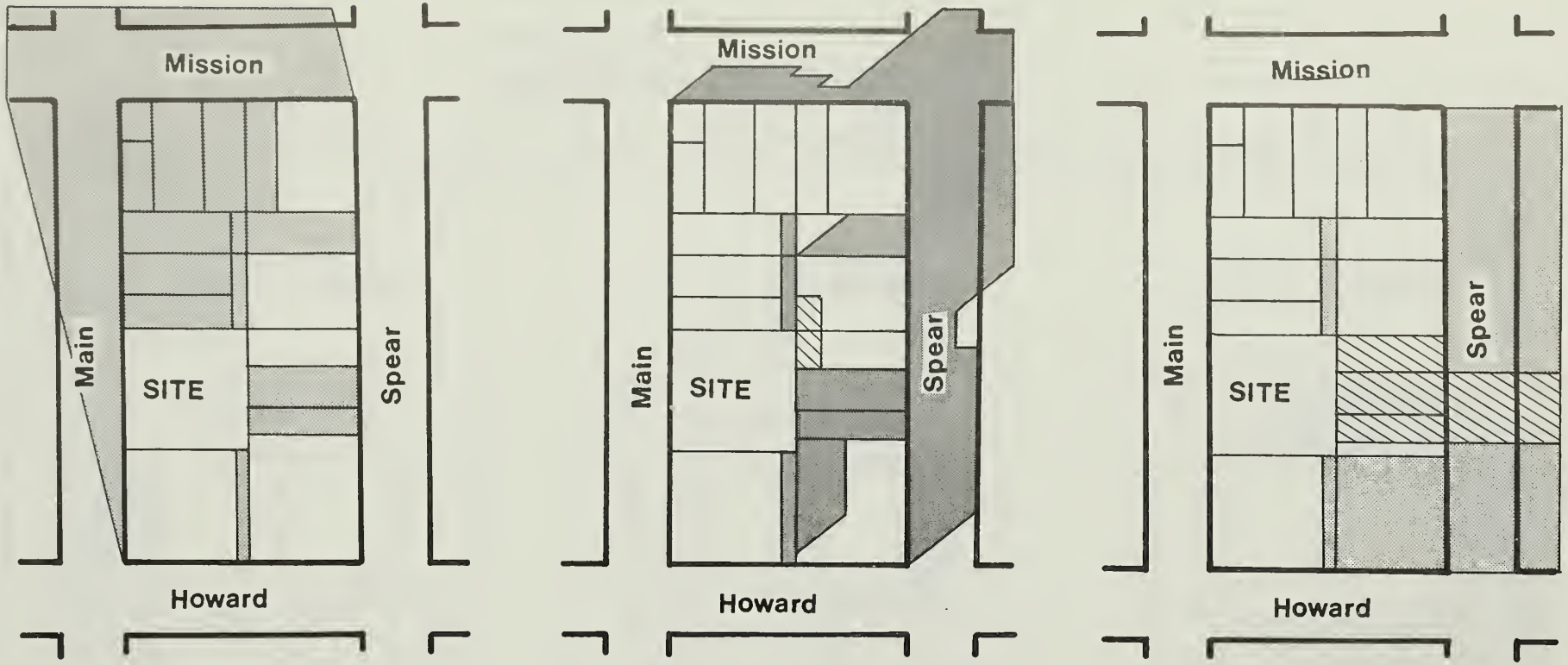
Scale Feet

Figure No. 6

Shadow Patterns June 21,

Existing Shadows

Shadows added by Project



North

0 75 150 300

Scale Feet

Figure No. 7

Shadow Patterns December 21,

Existing Shadows

Shadows added by Project

APPENDIX C

Fundamental Concepts of Environmental Noise

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

a. the intensity or level of the sound;
b. the frequency spectrum of the sound;
c. the time-varying character of the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or Hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in level. The quantitative expression of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Fortunately, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively and severely deemphasizes the importance of frequency components below 1000 Hz, with mild deemphasis above 5000 Hz. This type of frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange.

The weighting curve described above is called "A" weighting, and the level so measured is called the "A-weighted sound level", or simply "A-level".

The A-level in decibels is expressed "dBA"; the appended letter "A" is a reminder of the particular kind of weighting used for the measurement. In practice, the A-level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. All U.S. and international standard sound level meters include such a filter. Typical A-levels measured in the environment and in industry are shown in Figure A-1.

Although the A-level may adequately describe environmental noise at any instant in time, the fact is that the community noise level varies continuously. Most environmental noise includes a conglomeration of distant noise sources which

creates a relatively steady background noise in which no particular source is identifiable. These distant sources may include traffic, wind in trees, industrial activities, etc. These noise sources are relatively constant from moment to moment, but vary slowly from hour to hour as natural forces change or as human activity follows its daily cycle. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities or single vehicle passages, aircraft flyovers, etc., which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. The L10 is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L10 is considered a good measure of the "average peak" noise. The L50 is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period. The L50 represents the median sound level. The L90 is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period. The L90 is used to describe the background noise.

As it is often cumbersome to describe the noise environment with these statistical descriptors, a single number descriptor called the Leq is also widely used. The Leq is defined as the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises.

During the nighttime, exterior background noises are generally lower than the daytime levels. However most household noise also decreases at night and exterior noises become very noticeable. Further most people are sleeping at night and are very sensitive to noise intrusion.

To account for human sensitivity to nighttime noise levels a descriptor, Ldn, (day-night equivalent sound level) was developed. The Ldn divides the 24-hour day into the daytime of 7 am to 10 pm and the nighttime of 10 pm to 7 am. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Ldn, then, is the A-weighted average sound level in decibels during a 24-hour period with 10 dBA added to the hourly Leqs during the nighttime. For highway noise environments the Leq during the peak traffic hour is approximately equal to the Ldn.

The effects of noise on people can be listed in three general categories:

1) subjective effects of annoyance, nuisance, dissatisfaction;
2) interference with activities such as speech, sleep, learning;
3) physiological effects such as startle, hearing loss.

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Unfortunately, there is as yet no completely satisfactory measure of the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise.

Thus, an important parameter in determining a person's subjective reaction to a new noise is the existing noise environment to which one has adapted: the so-called "ambient" noise. "Ambient" is defined as "the all-encompassing noise associated with a given environment, being a composite of sounds from many sources, near and far". In general, the more a new noise exceeds the previously existing ambient, the less acceptable the new noise will be judged by the hearers.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

a) Except in carefully controlled laboratory experiments, a change of only 1 dBA cannot be perceived.
b) Outside of the laboratory, a 3-dBA change is considered a just-noticeable difference.
c) A change in level of at least 5 dBA is required before any noticeable change in community response would be expected.
d) A 10-dBA change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

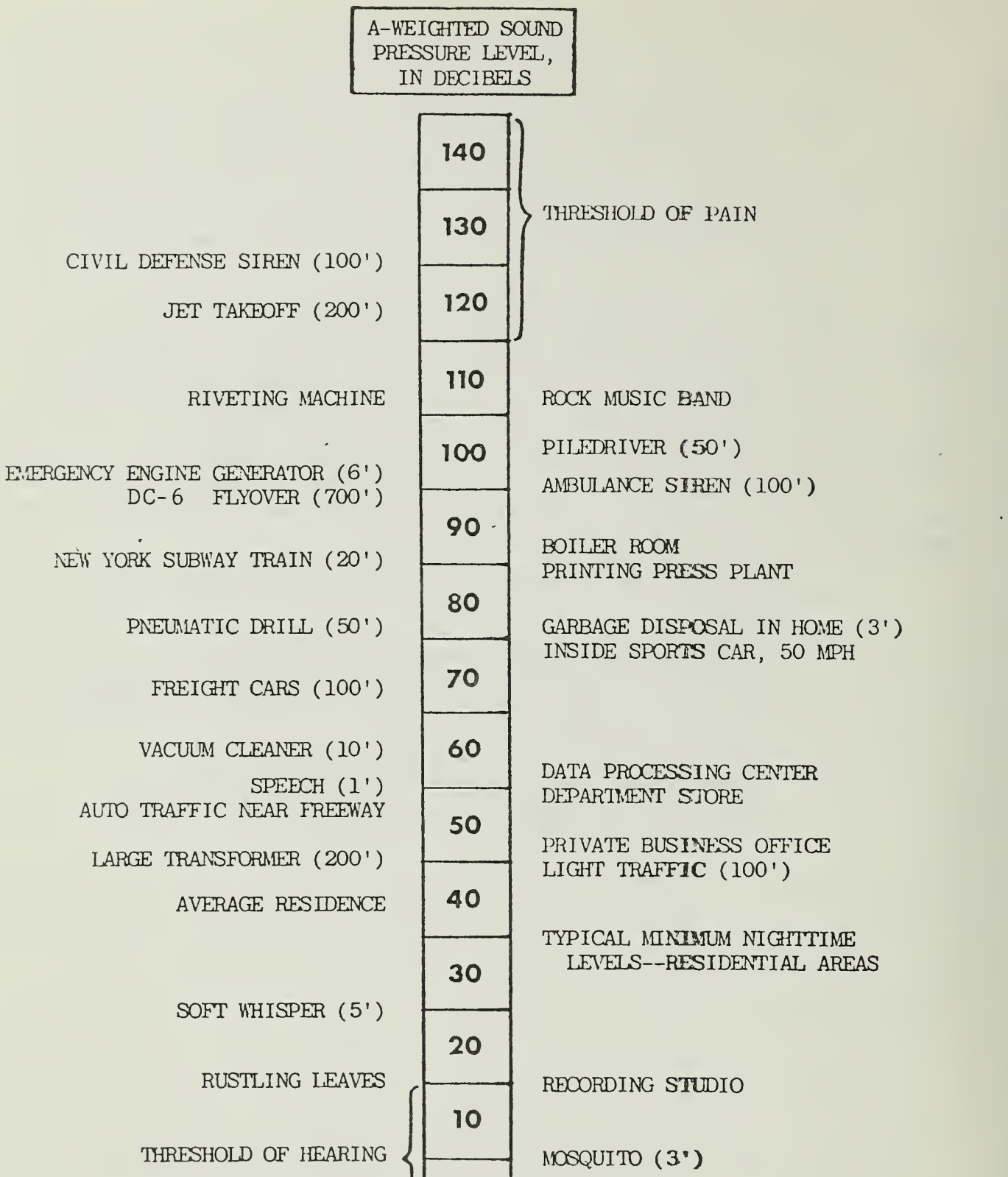


FIGURE A-1: TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY

APPENDIX D

Table 1

Estimated Replacement Costs of Proposed Project

Total property tax revenues shown in Table were based on replacement cost estimate as follows:

	Millions of Dollars
Land (already owned, 1980 assessed value)	0.5
Construction cost[1]	
Shell	18.0
Interior finish	5.5
Interim financing @ 15%[2]	3.5
Leasing costs @ 5%	1.2
Total	$28.7

[1] Does not include tenant improvements, which would be taxed as personal property.

[2] The interim financing is included as it represents the total development cost on which the property tax would be calculated.

TABLE 2

Summary of Recent Studies on Downtown's Fiscal Impact

STUDY, AUTHOR, DATE	PURPOSE OF STUDY	DATA SOURCES	STUDY METHODOLOGY	CONCLUSIONS
"Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase 1 Study, Sedway/Cooke, et al., Oct. 1979, pp. 56-59. Funded by Dept. of City Planning	To qualitatively assess the likely fiscal impact of new development in the C-3 area under existing zoning ordinances and under Proposition O.	SPUR Study (1975)	SPUR cost/revenue estimates for downtown in 1973 and for projected growth 1974-1990 were assumed. Proposition 13's effect on revenues and the possible need for increased transportation infrastructure were considered. Generalized conclusions about fiscal impact of new development were drawn.	1) After Proposition 13, "costs may exceed revenues in the downtown by as much as 25%." 2) "[N]ew downtown development will not solve the city's growing fiscal problem; without new revenue sources, development will make it worse in the long run."
Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980 Funded by San Francisco Chamber of Commerce	To quantify for 1976-77 and 1978-79 how much revenue the C-3-0 area generated and how much it cost to provide city services to the area.	Data compiled from city records and through conversations with city officials.	The study counted only revenues generated within the C-3-0 and costs of providing services to the C-3-0. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city."	The C-3-0 generated $56.79 million in 1976-77, or 61% more than the cost of city services to the area. In 1978-79, revenues were $53.29 million, or 48% greater than costs.
"Fiscal Considerations" Appendix C, 101 Montgomery Street DEIR, Recht Hausrath & Associates, January 1981. Funded by project sponsor	To draw generalized conclusions about "how new development downtown in a post-Proposition 13 environment is likely to change the City's fiscal health from what it would be without new development."	SPUR study, city records and conversations with city officials.	Conclusions were drawn about how revenues differ between existing and new buildings, and how costs differ between existing and new buildings. Then, under alternative assumptions about the cost/revenue balance in existing buildings and in new buildings, the fiscal impact over time of new development was compared to that of no new development.	"[A]n on-going process of new development would improve the City's fiscal situation." This beneficial impact would cease if new development were halted. This conclusion is tentative due to uncertainties about increased Muni costs.
Downtown Highrise District Cost/Revenue Study, David Jones, February 1981. Funded by San Franciscans for Reasonable Growth	To quantify for 1978-79 the revenues generated by businesses in the C-3-0 and the service costs imposed on the city and BART by the C-3-0.	Arthur Andersen study.	The Jones study differs from the Andersen study primarily as follows: 1) Costs of BART (but not revenues to BART) are included; 2) Only revenues paid by businesses and building owners are considered; 3) Muni deficit is computed differently; 4) Most costs are estimated as a percentage of revenues rather than on the basis of actual service demand in the C-3-0.	The C-3-0 imposed costs of $94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco.
Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, Gruen Gruen + Associates, March 1981. Funded by San Francisco Chamber of Commerce	To quantitatively estimate city revenues from the C-3-0 and costs of servicing the C-3-0 in 1998, assuming the addition of 30 million square feet of building space in the C-3-0 between 1981 and 1998.	Arthur Andersen study; data compiled from city records and through conversations with city officials.	"Only direct effects are considered." Costs are only measured for services "provided within the physical limits of the C-3-0 district" and revenues are limited to "taxes on buildings within the district and the activities that take place within those buildings." Assumes the Arthur Andersen study is accurate and builds upon it.	In 1980, revenues from the 39 million square feet of building space in the C-3-0 were 1.66 times as large as costs. In 1998, after completion of the 30 million square feet of new space, revenues from the entire 69 million square feet of C-3-0 building space would increase to 1.92 times as large as costs.

Source: Recht-Hausrath and Associates in FEIR ee 80.26,101 Montgomery Street, certified 7 May 1981